


Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: Programming with C		
	Scheme (L:T:P) : 4:0:0	Total Contact Hours: 52	Course Code: 15CS31T
	Type of Course: Lectures, Self Study & Student Activity	Credit : 04	Core/ Elective: Core
CIE- 25 Marks		SEE- 100 Marks	

Prerequisites

Knowledge of basic mathematics and IT skills..

Course Objectives

Understand the syntax of data types, analyze various formatting styles for input/output and appreciate the use of arrays, strings and functions to write C programs.

Course Outcome

On successful completion of the course, the students will be able to attain below Course Outcome (CO):

Course outcome		CL	Linked PO	Teaching Hours
CO1	Illustrate syntax rules for numerical constants and variables, data types, arithmetic operators and expressions and Articulate them with different types of input/output formats using simple problems.	R, U	1,2,3,4,8,9,10	10
CO2	Discuss different branching and looping statements and experiment using simple programs.	U, A	1,2,3,4,8,9,10	14
CO3	Discuss different types of functions and write simple programs.	U, A	1,2,3,4,8,9,10	06
CO4	Explain different types of arrays and write simple programs.	U, A	1,2,3,4,8,9,10	08
CO5	Describe preprocessor and Discuss different types of string functions.	U, A	1,2,3,4,8,9,10	06
CO6	Describe and differentiate between structure and unions to write simple programs.	U, A	1,2,3,4,8,9,10	08
			Total sessions	52

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
Programming with C	3	3	3	3	-	-	-	3	3	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

Course Content and Blue Print of Marks for SEE

Unit No	Unit Name	Hour	Questions to be set for SEE			Marks Weightage	Marks Weightage (%)
			R	U	A	A	
I	Introduction to 'C' Language	10	5	12	10	27	19.24
II	Decision making- Branching and Looping	14	-	15	23	38	26.9
III	Functions	06	-	10	10	20	11.54
IV	Arrays	08	-	07	15	22	15.39
V	Strings & Pre-processor	06	-	06	10	16	11.54
VI	Structures & Unions	08	-	12	10	22	15.39
Total		52	5	62	78	145	100

UNIT I: Introduction to 'C' Language

10 Hrs

Character set, Variables and Identifiers, Built-in Data Types, Variable Definition, Declaration, C Key Words-Rules & Guidelines for Naming Variables. Arithmetic operators and Expressions, Constants and Literals, Precedence and Order of Evaluation. Simple assignment statement, Basic input/output statement, Simple 'C' programs.

Algorithms – Definition and Characteristics. Simple algorithms. Flow chart – Type of flow chart. Simple flow charts

UNIT II: Decision making- Branching and Looping

14 Hrs

Conditions, Relational Operators, Logical Operator. if statement, if-else statement, nested if-else, if-else ladder, Switch, Break, Continue, Goto and Labels. Looping statements – while, do-while, for and nested for loop.

UNIT III: Functions **06 Hrs**

Definition of Function, Standard Library of C functions, function prototype, Formal parameter list, Return Type, Function call, Block structure, Passing arguments to a Function: call by value.

UNIT IV: Arrays **08Hrs**

What is an Array? Declaring an Array, Initializing an Array. One dimensional arrays: Array manipulation; Finding the largest/smallest element in array; Searching & Sorting of element from an array; Declaring & Initialization of Two dimensional arrays, Addition/Multiplication of two matrices, Transpose of a square matrix; Null terminated strings as array of characters, arrays as function arguments

UNIT V: Strings and Pre-processors **06 Hrs**

Strings - Introduction, Declaring & Initializing string variables, Reading & writing strings from variables, Arithmetic operations & characters, Putting strings together, Comparison of two strings, String handling functions

Pre-processors - Introduction, Macro substitution, File inclusion..

UNIT VI: Structures and Unions **08 Hrs**

Basic of Structures, Structures variables, initialization, structure assignment, nested structure, structures and arrays: arrays of structures, Unions, Size of structures, Structure as function arguments

Text books

Programming with ANSI-C, E. Balaguruswamy, Sixth Edition, Tata Mcgraw Hill.

References

1. Programming with ANSI & Turbo C, Ashok Kamthane, Second Edition, Pearson Education.
2. Let us C, Yashavant P Kanetkar, 14th Edition, BPB publication, ISBN 9788183331630
3. Programming in C and Data Structure, P.B.Kotur, Sapna Book house
4. http://spoken-tutorial.org/tutorial-search/?search_foss=C+and+C++&search_language=English
5. <http://www.tutorialspoint.com/cprogramming/>
6. <http://www.indiabix.com/online-test/c-programming-test/>

Suggested student activities

Note: the following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course coordinator and programme coordinator.
2. Each group should conduct different activity and no repeating should occur

1	Explore and analyze topics to improve the level of creativity and analytical skill by taking Quiz tests / assignments. Documents have to be maintained as a record.
2	Create a power point presentation on the topic relevant to course or advanced topic as an extension to the course to improve the communication skills. Documents have to be maintained as a record
3	Visit different sites relevant to topics. Listen to the lectures and submit a handwritten report

Course Delivery

The course will be delivered through lectures and Power point presentations/ Video

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE	IA	Students	Three IA tests (Average of three tests will be computed)	20	Blue books	1 to 6
				Student activities	05	Report	1 to 6
				Total	25		
	SEE	End Exam		End of the course	100	Answer scripts at BTE	1 to 6
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2,3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1 to 6 Effectiveness of Delivery of instructions & Assessment Methods

Note: I.A. test shall be conducted for 20 marks. Average marks of three tests shall be rounded off to the next higher digit.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	45
3	Application	45

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue books (20 marks)
2. Student suggested activities report for 5 marks
3. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

FORMAT OF I A TEST QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th weak of sem 10-11 Am	I/II SEM		20			
	Year:					
Name of Course coordinator : CO's: _____			Units: __			
Question no	Question		MARKS	CL	CO	PO
1						
2						
3						
4						

Note: Internal Choice may be given in each CO at the same cognitive level (CL).

MODEL QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th weak of sem 10-11 AM	III SEM	Programming with C	20			
	Year: 2015-16	Course code:15CS31T				
Name of Course coordinator : Units:1,2 Co: 1,2			Note: Answer all questions			
Question no	Question		CL	CO	PO	
1	What is variable? Write the rules and guidelines for naming variable? (5) OR Evaluate the expression $(a + b) * (c + d) + e - f/g*h + 3.25$, where $a=5$, $b=3$, $c=-2$, $d=7$, $e=1$, $f=6$, $g=8$, $h=1$		R	1	1,2	

2	Define algorithm? Explain its characteristics (5) OR Write a flow chart and C program to find the sum and average of three numbers	U A	1	1,2
3	Give the general syntax and an example of do.....while loop statement. Why it is called as "exit-controlled" loop? (5)	U	2	1,2
4	Explain printf() statement with an example.	A	2	1,2

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Diploma in Computer science & Engineering**III- Semester****Course Title: Programming with C**Time: **3 Hours**Max Marks: **100****PART-A****Answer any SIX questions. Each carries 5 marks.****5X6=30 Marks**

- 1) What is a variable? Write the rules and guidelines for naming variable?
- 2) Explain scanf() statement with an example
- 3) Compare while and do....while statement.
- 4) Explain Relational and Logical operators
- 5) Write a short note on C library functions
- 6) What are the advantages of functions?
- 7) List string handling functions.
- 8) Define a structure. Give general syntax of a structure. Explain with an example.
- 9) Compare array versus structures.

PART-B**Answer any SEVEN full questions each carries 10 marks.****10X7=70 Marks**

1. Explain the data types of C language
2. Write a C program to swap the values of two variables without using third variable
3. Explain the switch statement with syntax with an example.
4. Write a program to find the sum of n natural numbers.
5. Explain If.....else statements with an example.
6. Explain the following:
 - i. Passing argument to a function
 - ii. Returning value from a function
7. a) List the advantages and disadvantages of an array.
b) What is an array? How are arrays declared and initialized?
8. Write a program to find the transpose of a matrix.
9. Explain the following function with an example:

- i. getchar() ii. strrev() iii. strcmp() iv. strcat() v. strcpy()
 10. Write a program to create structure with an employee details & display the same.



MODEL QUESTION BANK

Diploma in Computer Science & Engineering

III Semester

Course Title: Programming with C

CO	Question	CL	Marks
I	What is a token? Give example for each type of token.	R	05
	What is a constant? Explain different types of C constants.	R	
	What is variable? Write the rules and guidelines for naming variable?	R	
	Define the term Identifier. Give an example.	R	
	List the basic data types with byte specification	U	
	List the hierarchy (precedence) rules of arithmetic operators.	U	
	Evaluate the expression $2 + 1 * 3 - 4 \% 3 * 1 + 16 / 2 \% 5$ and similar type expressions to be solved having arithmetic, relational and logical operators also	U	
	List the important features of C language.	U	
	Give a general form of ternary operator, Explain with an example.	A	
	Explain simple assignments in C. Give an example.	U	
	List input and output functions	U	
	Explain printf() statement with an example.	A	
	Explain scanf() statement with an example.	A	
	Define algorithm? Explain its characteristics	U	
	Define flow chart? List the symbols used in flow-chart	U	
Write a algorithm and C program to find the sum and average of three numbers	A		
With general syntax explain formatted input-output statements. Give example for each.	U	10	
Define the following with an example: i. Increment Operator. ii. Decrement Operator	U		
1. Explain the basic data types of C language.	U		
Define the following with an example: i. C Keyword. ii. Variable. iii. Constants. iv. Format Specifier v. Arithmetic Expression.	U		
Define the following terms. Give one example each. i. Constant. ii. Keyword. iii. Relational Expression. iv. Assignment statement.	U		

	v. Conditional operator.		
	Write a flow chart and C program to swap the values of two variables without using third variable.	A	
	Explain the basic structure of C program.	U	
	Write an algorithm and C program to find the largest of three numbers using conditional operators.	A	
	Write an algorithm and flow chart to compute sum of n numbers	A	
	Write an algorithm and C program to find area and circumference of a circle (circum= $2\pi r$ and Area= πr^2)	A	
II	Explain different logical operators with examples.	U	05
	Explain different relational operators with examples.	U	
	Write the general syntax of if & if-else statement.	U	
	Compare while and do...while statement.	U	
	Compare if and if-else statement.	U	
	Illustrate and explain nested if –else statement.	U	
	state and explain if –else ladder statement.	U	
	Write a program to find the largest of three numbers.	A	
	With general syntax, explain the significance of break and continue statement in loops..	U	
	Define the following i. break. ii. goto.and label iii. continue.	U	
	List and explain any two unconditional statements/jumping statements.	U	10
	Explain Relational and Logical operators.	U	
	With general syntax, explain the need of break statement in Switch.	U	
	Give the general syntax and an example of do.....while loop statement. Why it is called as "exit-controlled" loop?	U	
	Differentiate between break and continue statements.	U	
	Write a C program to check whether the given number is odd or even.	A	
	Explain the logical operators with example.	U	
	Explain relational operators with example.	U	
	Explain for statement with an example.	U	
	Explain If.....else statements with an example.	A	
Explain nested for loop with the general syntax.	U	10	
Write a program to find roots of quadratic equation using switch statement.	A		
Explain the switch statement with syntax, with an example.	A		
Explain entry controlled and exit controlled loop with an example.	A		
Write a program to find the numbers and sum of all numbers greater than 150 and less than 250 which are divisible by 8.	A		
Write a program to find the largest of 3 numbers using if...else statement.	A		
Write a program to find smallest of three numbers using nested if.....else statement.	A		
Write a program to check whether the given number is prime or not.	A		


	Write a program to generate Fibonacci series.	A	
	Write a program to find the sum of n natural numbers.	A	
	Write a program to find the reverse of a given numbers.	A	
	Write a program to count even and odd from n natural numbers.	A	
III	Define function. List different types of functions.	U	05
	What are the advantages of functions?	U	
	List the difference between actual parameters and formal Parameters.	U	
	Explain scope and lifetime of a variable in a function.	U	
	What do you mean by user defined function? Explain.	U	
	Write a short note on C library functions.	U	
	Write a user defined function great() that computes greatest of two numbers and return the largest number to function main().	A	
	Write the block structure of a function.	U	
	Define the following 1. Formal parameter 2. Actual parameter 3. Return type 4. Function call	U	
	What is a function prototype give an example.	U	
	Write a program to find the factorial of a given number using function.	A	10
	Write a program to find the GCD of a given number using function.	A	
	Explain Call by Value with an example.	U	
	Explain the following with a example: i. Passing argument to a function ii. Returning value from a function	A	
IV	What is an array? Explain how to declare and initialize a single dimension array?	U	05
	With an example, explain declaration & initialization of two dimensional array.	U	
	Compare one dimensional array with two dimensional array.	U	
	Explain multidimensional array with an example.	A	
	Write an algorithm to search a given key in the array of elements.	A	
	Discuss one dimensional array with example.	U	
	Explain different operations on arrays.	U	
	Write a program in C to store 25 elements (integers) in two-dimensional array called "temp" in 5-rows and 5-columns. The program should also display these numbers in a matrix format.	A	
	Write a program to transpose the given matrix.	A	
	List the advantages and disadvantages of an array.	U	
	Write a C program to find the sum of principle diagonal elements of a matrix.	A	
	Write a program to search an element in an array.	A	
	Write a program to find the sum and number of positive numbers and negative numbers in an array	A	
	Write a program to sort 'N' elements of an array using simple sort.	A	
Define the following: a. Array b. Searching c. Sorting	U		

	Write a program to find the sum of two matrices.	A	10	
	Write a C function to compute trace and norm of a matrix.	A		
	Write C function to compute largest of N numbers.	A		
V	Define string. How to Declare & Initialize string variables with an example.	U	05	
	Write a program to concatenate two strings using in-built string function.	A		
	Explain how to read the string from the terminal and write a string to the terminal with an example.	U		
	Explain with an example the Null-terminated strings as "Array of Characters".	U		
	Write a C program to check whether the given string is a palindrome or not.	A		
	List string handling functions.	U		
	Write a program to compare any two strings using string functions	A		
	List the advantages of preprocessor directives.	A		
	Explain briefly how to use #define directive.	A		
	Write a short note on File inclusion.	U		
	Explain with Example the #include preprocessor directive.	A		
	How do you define symbolic constants? Illustrate with an example	A		
	10	Explain the following function with an example: i. getchar() ii. strrev() iii. strcmp() iv. strcat() v. strcpy()		U
Define a macro. Explain macro substitution with an example.		U		
Define string. Give an example. Explain the various string handling functions with an example.		U		
Write a C program to verify that the given string is palindrome or not using iterative method.		A		
Write a program to find the area of a circle using macros.		A		
Write a note on the following: a. Pre-processor directive b. Macro substitution		U		
VI		Define a structure. Explain with an example, the general syntax of a structure.	U	5
		What are structure variables? Explain how to declare and initialize a structure variable.	U	
	Define a union. Explain with an example, the general syntax of a union.	U		
	List the difference between Union and Structure.	U		
	Compare Arrays versus Structures.	U		
	Define array of structure. Give an example.	U		
	Explain array variable as a structure member with an example.	U		
	Explain array of structure with an example.	U	10	
	Explain the need of structure within a structure (nested structure) with an example	U		

	Write a program to read 'N' student information and display it.	A	
	Write a program to create structure with an employee details & display the same	A	



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	Course Title: Computer Organization		
	Scheme (L:T:P) : 4:0:0	Total Contact Hours: 52	Course Code: 15CS32T
	Type of Course: Lectures, Self Study & Student Activity.	Credit : 04	Core/ Elective: Core
CIE- 25 Marks		SEE- 100 Marks	

Prerequisites

Fundamentals of Digital electronics and basics of Computers and its peripherals.

Course Objectives

Understand the organization of a computer with its various processing units, memory and peripherals.

Course Outcome

On successful completion of the course, the students will be able to attain below Course Outcome (CO):

Course outcome		CL	Linked PO	Teaching Hours
CO1	Recognize and explain the functional units of computers	<i>R</i>	1,2,10	02
CO2	Describe assembly languages and machine instructions by analyzing how the data is stored and fetched from memory.	<i>U, A</i>	1,2,3,4,8,10	10
CO3	Explain the execution of complete instruction and bus organizations.	<i>U</i>	2,8,9,10	08
CO4	Identify various interrupt handling mechanism and buses.	<i>U, A</i>	1,2,3,8,9,10	10
CO5	Differentiate between different types of memories.	<i>U, A</i>	1,2,3,4,5,6,7,8,9,10	14
CO6	Discuss core architecture and pipelined concept.	<i>U</i>	2,10	08
			Total sessions	52

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
Computer Organisation	3	3	2	2	1	1	1	3	3	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

Course Content and Blue Print of Marks for SEE

Unit No	Unit Name	Hour	Questions to be set for SEE			Marks Weightage	Marks Weightage (%)
			R	U	A		
I	Basic Structure Of Computers	02	5	-	-	5	4
II	Machine Instructions and Programs	10	-	20	8	28	18
III	Basic Processing Unit	08	-	22	-	22	15
IV	Input/Output Organization	10	-	18	10	28	18
V	The Memory system	14	-	20	18	38	30
VI	Processors and Pipelining	08	-	24	-	24	15
Total		52	5	104	36	145	100

UNIT I : Basic Structures of Computers

02 Hrs

Functional Units, Input Unit, Memory Unit, Arithmetic and Logic Unit, Output Unit, Control Unit, Basic Operational Concepts, Bus Structures.

UNIT II: Machine Instructions & Programmes

10 Hrs

Memory Locations and Addresses , Byte Addressability, Big Endian and Little Endian Assignments, Word Alignment, Accessing numbers, characters and character strings, Memory Operations, Instruction and Instruction sequencing, Register Transfer notation, Assembly Language notation, Basic instruction types, Instruction execution and straight line sequencing, Branching, Condition codes, Addressing modes, Implementation of variables and constants, Indirection and pointers, Indexing and arrays, Relative addressing, Additional modes, Assembly Language, Assembler directives, Assembly and execution of programs, Basic Input- Output Operations.

UNIT III: Basic Processing Unit

08 Hrs

Some Fundamental Concepts, Register transfers, Performing an Arithmetic or Logic operation, Fetching a word from memory, Storing a word in memory, Execution of a complete Instruction, Branch instructions, Multiple Bus Organization, Hardwired

Control(basic block diagram only), A complete processor, Basic organization of Micro programmed Control Unit.

UNIT IV: Input Output Organization

10 Hrs

Accessing I/O Devices, Interrupts, Interrupt Hardware, Enabling and Disabling Interrupts, Handling Multiple Devices, Controlling Device requests, Exceptions, Direct Memory Access, Bus arbitration, Buses, Synchronous bus, Asynchronous bus, Interface Circuits, Parallel port and Serial port (Basic concept only), Standard I/O Interfaces (Basic concepts only), Peripheral Component Interconnect (PCI) Bus , SCSI Bus(Basic concepts only), Universal Serial Bus (USB) (Basic concepts only)

UNIT V: The Memory System

14 Hrs

Some Basic Concepts, Semiconductor RAM Memories, Internal Organization of memory chips, Static Memories, Asynchronous DRAMs, Synchronous DRAMs, Structure of larger memories, Memory system consideration, Rambus memory, Read-Only Memories- ROM, PROM, EPROM, EEPROM, Flash Memory, Speed, Size and Cost, Cache Memories...

UNIT VI: Processors and Pipelining

08 Hrs

Processor- Introduction, Advanced processor technology, instruction set architectures, CISC scalar processor, RISC scalar processor, comparison CISC and RISC, super scalar processor (basic concept only), VLIW architecture, comparison of super scalar and VLIW, Multi core architecture

Pipelining- Introduction, pipeline principles-linear pipeline processor-Asynchronous model, synchronous model, Non linear pipeline processor, classification of pipeline processor

Text Books

1. Computer Organization, Carl Hamacher, zvonko Vranesic and Safwat Zaky, McGraw Hill, 5th edition (**Chapters 1, 2, 4, 5, 7, for UNIT I to UNIT V**)
2. Advanced Computer Architecture (A practical approach), Rajiv Chopra, S. Chand, Revised edition, reprint 2014, ISBN8121930774 - for *UNIT VI page no 133 to 138 , 143 to 145 , 192 to 194 , 218 to 219 , 221 to 223*

References

1. <http://elearning.vtu.ac.in/06CS46.html>
2. http://nptel.ac.in/courses/Webcourse-contents/IIT-%20Guwahati/comp_org_arc/web/
3. William Stallings, “Computer Organization and Architecture: Designing for Performance”, Eighth Edition, Pearson.
4. Computer architecture and organization , 4th edition , P Chakraborty , JAICO publishers
5. http://www.srmuniv.ac.in/downloads/computer_architecture.pdf
6. http://www.dauniv.ac.in/downloads/CArch_PPTs/CompArchCh06L01PipeLine.pdf

Suggested list of student activities

Note: The following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course co-ordinator and programme co-ordinator

2. Each group should conduct different activity and no repeating should occur.

1	Conduct a survey on various types of processors available with their features and submit a report.
2	List out the features of 8086 microprocessor and 8051 micro controller with respect to architecture and working.
3	Submit a report on hardware and software interrupts.
4	A Case study on Moore's Law about the processors and submit a report.
5	Conduct a survey on types of memories and also about the cost and speed of various memories with comparison.

Course Delivery

The course will be delivered through lectures and Power point presentations/ Video

Course Assessment and Evaluation Scheme

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Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2,3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1 to 6 Effectiveness of Delivery of instructions & Assessment Methods

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Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	50
3	Application	40

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue books (20 marks)
2. Student suggested activities report for 5 marks
3. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

FORMAT OF I A TEST QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th weak of sem 10-11 Am	I/II SEM		20			
	Year:					
Name of Course coordinator : CO's:_____			Units:___			
Question no	Question		MARKS	CL	CO	PO
1						
2						
3						
4						

Note: Internal Choice may be given in each CO at the same cognitive level (CL).

MODEL QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks		
Ex: I test/6 th weak of sem 10-11 AM	III SEM	Computer Organization	20		
	Year: 2015-16	Course code:15CS32T			
Name of Course coordinator : Units:1,2 Co: 1,2			Note: Answer all questions		
Question no	Question		CL	CO	PO
1	Describe the role of MAR, MDR , PC and IR.		(5) R	1	1,2
2	Explain the role of buffer registers		(5) R	1	1,2
3	Describe the Big-endian and Little-endian addressability		(5) U	2	1,2
4	Explain straight line sequencing		(5) U	2	1,2
	OR Describe register and absolute addressing mode.				

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Diploma in Computer science & Engineering**III- Semester****Course Title: Computer Organization****Time: 3 Hours****Max Marks: 100****PART-A****Answer any SIX questions. Each carries 5 marks.****5X6=30 Marks**

- 1) Explain the basic functional unit of a Computer.
- 2) Describe register and absolute addressing mode.
- 3) Write a note on register transfers.
- 4) Explain the concept of micro programmed control .
- 5) Explain how to enable and disable an interrupt.
- 6) Explain the use of PCI bus in the computer system.
- 7) Explain the Double-data-rate SDRAM concept.
- 8) Explain the concept of flash drives.
- 9) Compare super scalar verses VLIW.

PART-B**Answer any SEVEN full questions each carries 10 marks.****10X7=70 Marks**

1. 1. Explain with examples one-address, two-address and three-address instruction types.
2. Describe program-controlled I/O operation.
3. Illustrate with diagram arithmetic and logic operation.
4. Describe the working of DMA.
5. Explain the serial port interface.
6. Explain the operation asynchronous DRAM.
7. Describe the features of PROM, EPROM and EEPROM.
8. Illustrate with diagram memory hierarchy with respect to speed, size and cost.
9. Explain CISC scalar and RISC scalar processor.
10. Describe Arithmetic, Instruction and processor pipelining.




MODEL QUESTION BANK**Diploma in Computer Science & Engineering****III Semester****Course Title: Computer Organization**

CO	Question	CL	Marks
I	Explain the basic functional unit of a Computer.	R	05
	Describe the role of MAR, MDR , PC and IR.	R	
	Explain in brief the basic operation concept between processor and the memory.	R	
	Explain the significance of single bus structure.	R	
	Explain the role of buffer registers.	R	
II	Explain byte addressability.	U	05
	Describe the Big-endian and Little-endian addressability.	U	
	Explain the basic memory operation.	U	
	Explain straight line sequencing.	U	
	Write a note on conditional codes.	U	
	Describe register and absolute addressing mode.	U	
	Write a note on relative addressing.	U	
	Explain with examples one-address, two-address and three-address instruction types.	U	10
	Illustrate Branching concept with Example.	A	
	Illustrate with examples Indirect addressing.	A	
Describe Indexed addressing with examples.	A		
Explain different assembler directives.	U		
Explain the execution of assembly language program.	U		
Describe program controlled I/O operation.	U		
Explain the significance of auto-increment and auto-decrement addressing mode	U		
III	Explain the different phases for instruction execution .	U	05
	Write a note on register transfers.	U	
	Explain how a complete instruction is executed.	U	
	Write a note on Hardwired control unit.	U	
	Explain the concept of micro programmed control unit.	U	
	Explain single bus organization.	U	10
	Illustrate with diagram arithmetic and logic operation.	U	
	Describe fetching a word from memory.	U	
	Explain multiple bus organization.	U	
	With block diagram explain complete processor.	U	
	Explain the memory-mapped I/O concept.	U	05
	Illustrate program controlled I/O.	U	
	Write a note on interrupts.	U	
	Explain how to enable and disable an interrupts.	U	
	Write a note on vectored interrupts.	U	
	Explain the exception concepts with respect to I/O.	U	

IV	Explain bus arbitration logic.	U	10	
	List the activities of an I/O interface.	U		
	Explain the use of PCI bus in the computer system.	A		
	Write a note on SCSI bus.	A		
	Explain the universal serial bus concept.	U		
	Illustrate with examples interrupt service routine.	A		
	Explain implementation of prioritized interrupts.	U		
	Describe the working of DMA.	U		
	Explain synchronous and asynchronous bus.	U		
	Explain with example parallel port connectivity.	A		
	Explain serial port interface.	A		
	V	Illustrate how to implement a static RAM memory cell.		A
Illustrate how to implement CMOS memory.		A		
Explain the Double-data-rate SDRAM concept.		U		
Write a note on Ram bus memory.		U		
Explain the configuration of ROM cell.		U		
Write a note on flash memory.		A		
Explain the concept of flash drives.		A		
Explain the significance of cache memory.		U		
Explain the internal organization of memory chips.		U	10	
Explain the operation of asynchronous DRAM.		U		
Explain the operation of synchronous DRAM.		U		
Explain static and dynamic memory system.		U		
Explain the use of memory controller with diagram.	A			
Describe types of ROM	A			
Illustrate with diagram memory hierarchy with respect to speed, size and cost	U			
Explain the working of cache memory operations.	U			
VI	Explain Architecture of RISC machine.	U		05
	Compare CISC verses RISC.	U		
	Explain super scalar processor.	U		
	Compare super scalar verses VLIW.	U		
	List advantages of multi core architecture.	U		
	List the applications of multi core architecture.	A		
	Explain Non-linear pipeline processor.	U	10	
	Explain VLIW Architecture.	U		
	Explain CISC scalar and RISC scalar processor .	U		
	With neat diagram explain Multi core architecture.	U		
	Explain Asynchronous and synchronous model of linear pipeline processor.	U		
	Describe Arithmetic, Instruction and processor pipelining.	U		



Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: Database Management Systems		
	Scheme (L:T:P) : 4:0:0	Total Contact Hours: 52	Course Code: 15CS33T
	Type of Course: Lectures, Self Study & Student Activity	Credit : 04	Core/ Elective: Core
CIE- 25 Marks		SEE- 100 Marks	

Prerequisites

Knowledge of programming language.

Course Objectives

1. Understand database concepts, applications, data models, schemas and instances.
2. Implement the relational database design and data modelling using entity-relationship (ER) model.
3. Demonstrate the use of constraints and relational algebra operations.
4. Use of SQL in querying the database
5. Demonstrate Normalization process.
6. Learn the new emerging Technologies and Applications in database.

Course Outcome

On successful completion of the course, the students will be able to attain below Course Outcome (CO):

Course outcome		CL	Linked PO	Teaching Hours
CO1	Identify the characteristics of database and describe the architecture and languages of Database system.	R, U	1,2,5,6,7,8,9,10	08
CO2	Identify the elements used in Entity-Relationship diagram and sketch a simple diagram.	U, A	1,2,3,4,5,6,7,8,9,10	08
CO3	Summarize relational model concept and illustrate the relational constraints.	U, A	1,2,3,4,5,6,7,8,9,10	08
CO4	Describe Structured Query Language (SQL) and apply to query a database.	A	1,2,3,4,5,6,7,8,9,10	10
CO5	Recognize and interpret normalization for relational databases.	U, A	1,2,3,4,5,6,7,8,9,10	08
CO6	Visualize the features of NOSql and identify the database applications.	A	1,2,3,4,5,6,7,8,9,10	10
			Total sessions	52

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
Computer Organisation	3	3	3	3	3	3	3	3	3	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

Course Content and Blue Print of Marks for SEE

Unit No	Unit Name	Hour	Questions to be set for SEE			Marks Weightage	Marks Weightage (%)
			R	U	A	A	
I	Identify the characteristics of database and describe the architecture and languages of Database system.	08	10	12	-	22	15.38
II	Identify the elements used in Entity-Relationship diagram and sketch a simple diagram.	08	6	10	6	22	15.38
III	Summarize relational model concept and illustrate the relational constraints.	08	5	10	7	22	15.38
IV	Describe Structured Query Language (SQL) and apply to query a database.	10	-	5	25	30	19.24
V	Recognize and interpret normalization for relational databases.	08	-	24	-	24	15.38
VI	Visualize the features of NOSql and identify the database applications.	10	-	15	10	25	19.24
Total		52	21	76	48	145	100

UNIT I : Databases and Data Base Users

08 Hrs

Introduction, An Example, Characteristics of the database approach, Actors on the scene, Workers behind the scene, Advantages of using the DBMS Approach, A Brief History of Database Applications, When Not to use a DBMS

Database System Concepts and Architecture - Data Models, Schemas, and Instances, Three-Schema Architecture and Data Independence, Database Languages and Interfaces, The Database System Environment, Centralized and Client /Server Architectures for DBMSs, Classification of database Management System.

UNIT II: Data Modelling Using the Entity-Relationship(ER) Model

08 Hrs

Using High-Level Conceptual Data Models for Database Design, An example Database Application, Entity Types, Entity Sets, attributes and keys, Relation Types, Relationship Sets, roles and structural constraints, Weak Entity Types, Refining the ER Design for the Company Database, ER Diagrams, naming, conventions and design issues, Relationship Types of Degree Higher Than Two.

UNIT III: Relational Data Model and Relational Data Base Constraints 08 Hrs

Relational Model concepts, Relational Model Constraints and relational database schemas, Update Operation, Transaction and Dealing with constraints violations.

UNIT IV: SQL: Schema Definition, constraints, queries and views 10 Hrs

SQL Data Definition and data types, Specifying constraints in SQL, Schema Change statement in SQL, Basic queries in SQL, More Complex SQL queries, INSERT, DELETE and UPDATE statements in SQL, Specifying constraints and Assertions and Triggers, Views(Virtual Tables) in SQL

UNIT V: Functional Dependencies and normalization for relational databases 08 Hrs

Informal Design guidelines for relation schemas, Functional dependencies, Normal forms based on primary keys, General Definition of second and third normal forms, Boyce-codd Normal form.

UNIT VI: Fundamentals of Data Base Transaction Processing 10 Hrs

Introduction to transaction processing, transaction and system concepts, desirable properties of transactions.

NoSQL – Introduction, Distributed Systems, Advantages & Disadvantages of Distributed Computing, Scalability, What is NoSQL? Why NoSQL? RDBMS vs. NoSQL, Brief history of NoSQL, CAP theorem (Brewer’s Theorem), NoSQL pros/cons, NoSQL Categories, Production deployment.

Text books

1. Fundamentals of Database Systems, **Sixth** edition, 2014, Ramez Elmasri, Shamkan B. Navathe, Pearson Education, ISBN- 9788131792476
2. <http://www.w3resource.com/mongodb/nosql.php> --for NoSQL - **UNIT VI**

References

1. Fundamentals of Database Management Systems, Mark L. Gillenson, 2009, Wiley India
2. Database Management Systems – Raghu Ramakrishnan and Johannes Gehrke – 3rd Edition, McGraw-Hill, 2003
3. DBMS a practical approach , by E R Rajiv Chopra, S Chand publications.
4. <http://elearning.vtu.ac.in/10CS54.html>
5. <http://www.tutorialspoint.com/dbms/>
6. <http://www.indiabix.com/technical/dbms-basics/>
7. <http://beginner-sql-tutorial.com/sql.htm>

Suggested list of student activities

Note: The following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)
Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course co-ordinator and programme co-ordinator
2. Each group should conduct different activity and no repeating should occur.

1	Identify and do a case study on relationship types of degree higher than two in ER data modelling
2	Design E-R diagrams for the following databases with all constraints specifications. a) Hospital Management b) Hotel Management c) Student Database
3	Conduct a survey on various applications of database and submit a report of 3 to 4 pages.
4	Conduct a case study on any one Online Transaction Processing System (OLTP) and submit a report of 3 to 4 pages. Ex: Online Banking , Online Reservation (Bus, Train, Airlines)

Course Delivery

The course will be delivered through Lectures and Power point presentations/ Video

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE	IA	Students	Three IA tests (Average of three tests will be computed)	20	Blue books	1 to 6
				Student activities	05	Report	1 to 6
				Total	25		
	SEE	End Exam		End of the course	100	Answer scripts at BTE	1 to 6
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2,3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1 to 6 Effectiveness of Delivery of instructions & Assessment Methods

Note: I.A. test shall be conducted for 20 marks. Average marks of three tests shall be rounded off

to the next higher digit.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	15
2	Understanding	50
3	Application	35

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue books (20 marks)
2. Student suggested activities report for 5 marks
3. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

FORMAT OF I A TEST QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th week of sem 10-11 Am	I/II SEM		20			
	Year:					
Name of Course coordinator : CO's: _____			Units: __			
Question no	Question	MARKS	CL	CO	PO	
1						
2						
3						
4						

Note: Internal choice may be given in each CO at the same cognitive level (CL).

MODEL QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks
Ex: I test/6 th week	III SEM	Data Base Management Systems	20

of sem 10-11 AM	Year: 2015-16	Course code:15CS33T			
Name of Course coordinator : Units:1,2 Co: 1,2					
Note: Answer all questions					
Question no	Question	CL	CO	PO	
1	Define the following. (5) 1. Data Model 2. Database Schema/Intension 3. Database State/Extension 4. Data Sublanguage 5. DML.	R	1	1,2	
2	Define data independence and explain different types of it. (5)	R	1	1,2	
3	Explain the different cardinality ratios for binary relationship types. (5)	U	2	1,2	
4	Explain with suitable examples 1:1 and M:N relationship types. (5) OR Develop an E-R diagram for a company database.	A	2	1,2	

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
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Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

MODEL QUESTION PAPER

Code: 15CS33T

Diploma in Computer science & Engineering

III- Semester

Course Title: Data Base Management Systems

Time: 3 Hours

Max Marks: 100

PART-A

Answer any **SIX** questions. Each carries 5 marks.

5X6=30 Marks

1. What is database? List the important characteristics of database approach.
2. Explain with examples Entity Integrity Constraints and referential Integrity Constraint.
3. Explain the characteristics of Relations.
4. With examples write a note on CREATE and DROP command.
5. Differentiate Having and Where clause with example.
6. Explain the Boyce-Codd normal form with example.
7. Explain the generation of spurious tuples and how to overcome the same.
8. Discuss the advantages of NoSql versus RDBMS.
9. What is scaling. Explain the types of scaling.

PART-B

Answer any **SEVEN** full questions each carries 10 marks.

10X7=70 Marks

1. Discuss the advantages of DBMS Approach.
2. Define the following.
 - a) Data Model
 - b) Database Schema/Intension
 - c) Database State/Extension
 - d) Data Sublanguage.
 - e) DML.
3. With a neat diagram explain the different phases of database design.
4. Identify the entities, relationships and develop an E-R diagram for a company database.
5. Explain with example the different Constraints that are violated during UPDATE and DELETE operations
6. Consider the following schema & write the SQL queries.
SAILORS (sid, sname, rating, age)
BOATS (bid, bname, color)
RESERVES (sid, bid, day)
 - a. Retrieve names of sailors who reserved green boat.
 - b. Retrieve the colors of boats reserved by 'ramesh'.
 - c. Retrieve the names of sailors who have reserved a red or a green boat.
 - d. Retrieve the sid of sailors with age over 20 who have not reserved a red boat.
 - e. Retrieve the names of sailors who have reserved all boats called 'Interlake'.
7. List and explain the different data types used in SQL.
8. Discuss the informal design guidelines for relational schema.
9. Draw a state diagram and discuss the typical states during transaction execution.
10. Explain the need for concurrency control.



MODEL QUESTION BANK

Diploma in Computer Science & Engineering

III Semester

Course Title: Data Base Management Systems

CO	Question	CL	Marks
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I	What is database? List the important characteristics of database approach.	R	05
	What do you mean by data model? List and explain the different types of data model.	R	
	What is Data Independence? Differentiate between logical & physical Data Independence.	U	
	Define the following. 1. Data Model 2. Database Schema/Intension 3. Database State/Extension 4. Data Sublanguage 5. DML.	R	
	Explain the functions of database administrators and database designers.	U	
	Briefly explain the different types of End Users.	U	
	Define data independence and explain different types of it.	U	
	List the various DBMS languages and explain each.	R	
	List the various DBMS interfaces and explain each.	R	
	Explain the functions of different Database utilities.	U	
	Explain the important characteristics of database approach.	U	
Explain the actors on the scene and workers behind the scene.	U		
Discuss the advantages of DBMS Approach.	U		
Explain the two-tier client/server architecture for DBMS with neat diagram.	U		
Explain the DBMS components modules with neat diagram.	U		
Write a note on classification of DBMS.	U		
II	What is E-R diagram? List out the notations used for E-R diagram.	R	5
	Explain the different cardinality ratios for binary relationship types.	U	
	Differentiate between a) an attribute and value set b) stored and derived attributes.	U	
	Explain the structural constraints of relationship type.	U	
	Explain with suitable examples 1:1 and M:N relationship types.	A	
	With a neat diagram explain the different phases of database design.	U	10
	What is a Weak entity type, explain with an example how the entities are identified in a Weak entity.	U	
	Define the following term with examples:- a) Entity b) Entity set c) Multi-valued attribute d) Composite attribute e) Derived attribute	R	
	Identify the entities, relationships and develop an E-R diagram for a company database.	A	
	Identify the entities, relationships and develop an E-R diagram for a Hospital database.	A	
III	Compare entity integrity and referential integrity constraints.	U	5
	Classify the constraints on databases and give examples for each of them.	U	
	Explain the characteristics of Relations.	U	
	Explain with examples Entity Integrity Constraints and referential Integrity Constraint	A	
	Differentiate i) Key and super Key ii) degree and cardinality	U	
	Define the following term with examples:-	R	

	a) Domain b) Attribute c) Tuple d) Relation schema (R) e) Relation (r)		10
	Explain the insert, delete and update operation with examples.	A	
	Explain with example the different constraints that are violated during UPDATE and DELETE operations	U	
IV	Write a note on different data types supported by SQL.	R	5
	Write the general syntax of specifying Check constraint and default constraint while creating a table.	R	
	Differentiate Having and Where clause with example.	A	
	Write a note on aggregate functions in SQL.	U	
	Discuss the strategies for View Implementation.	U	
	With examples write a note on CREATE and DROP command.	A	
	Define view. How to create it? Give example.	U,A	
	Explain UPDATE and ALTER command with example.	U,A	
	Write a note on basic queries in SQL.	U	
	Explain the different schema change statements in SQL with example.	A	
	List and explain the different data types used in SQL.	U	10
	Explain different constraints available in SQL with example.	U	
	List and explain the different aggregate functions available in SQL with example.	A	
Explain the following with examples: a) Insert b) Delete c) Distinct d) Order by e) Where	A		
Explain the following Operators with examples: a) ANY b) ALL c) IN d) LIKE e) BETWEEN	A		
Consider the following schema & write the SQL queries. SAILORS (sid, sname, rating, age) BOATS (bid, bname, color) RESERVES (sid, bid, day) a) Retrieve names of sailors who reserved green boat. b) Retrieve the colors of boats reserved by 'ramesh'. c) Retrieve the names of sailors who have reserved a red or a green boat. d) Retrieve the sid of sailors with age over 20 who have not reserved a red boat. e) Retrieve the names of sailors who have reserved all boats called 'Interlake'.	A		
And Similar databases to be considered with different set of queries.			
V	Explain the generation of spurious tuples and how to overcome the same.	U	5
	Differentiate between i) prime attribute and non prime attribute ii) Full functional dependencies and partial dependencies with examples.	U	
	Explain the functional dependencies with examples.	U	
	Explain second normal form with an example.	U	
	Explain third normal form with an example.	U	

	Explain the Boyce-Codd normal form with example.	U	
	Explain the different UPDATE anomalies of tables.	U	10
	Discuss the informal design guidelines for relational schema.	U	
	What is normalization? Explain the different types of normal forms with examples.	U	
VI	Explain the following terms: transaction, concurrency control.	U	
	Explain the desirable properties of a transaction.	U	
	Write a note on System Log.	U	
	Write a note on commit point of a transaction.	U	
	Discuss the advantages of NoSql versus RDBMS.	U	
	Explain CAP theorem.	U	
	Explain the advantages of distributed computing.	U	
	What is scaling. Explain the types of scaling.	U	
	Differentiate between ACID and BASE.	U	
	Bring out the advantages and disadvantages of Nosql.	U	
	Draw a state diagram and discuss the typical states during transaction execution.	A	10
	Discuss the different types of failures that occur during transaction execution.	A	
	Explain the need for concurrency control.	A	
	Explain the categories of NoSql.	U	
	Explain Column store and Row store with suitable examples.	A	



Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: Computer Network		
	Scheme (L:T:P) : 4:0:0	Total Contact Hours: 52	Course Code: 15CS34T
	Type of Course: Lectures, Self Study & Student Activity.	Credit : 04	Core/ Elective: Core
CIE- 25 Marks		SEE- 100 Marks	

Prerequisites

Basic Knowledge of Computers and Communication

Course Objectives:

1. Discuss basic concepts, the need, and the various components in Networking
2. Learn the types of network topologies used in a network.
3. Discuss the importance of LAN components, protocols and addressing schemes.
4. Learn the basic concepts of WAN connectivity and its devices.

Course Outcome

On successful completion of the course, the students will be able to attain below Course Outcome (CO):

Course outcome		CL	Linked PO	Teaching Hours
CO1	Define various data communication components in networking.	R, U	1,2,10	06
CO2	Describe networking with reference to different types of models and topologies.	R, U	1,2,10	06
CO3	Summarize the concepts related to error detection, correction and error control techniques.	R, U	2,3,4,5,10	08
CO4	Recognize the importance of LAN components, protocols that enable multiple computers to communicate with one another.	U, A	2,3,4,8,10	14
CO5	Identify the features of the different IP address classes.	R, A	2,3,4,10	06
CO6	Explain different connectivity and devices related to WAN.	U, A	2,3,4,5,8,10	12
		Total sessions		52

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
Computer Network	3	3	2	2	2	-	-	2	3	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

Course Content and Blue Print of Marks for SEE

Unit No	Unit Name	Hour	Questions to be set for SEE			Marks Weightage	Marks Weightage (%)
			R	U	A		
I	Introduction to Data Communication	06	05	11	-	16	11.53
II	Introduction to Networking and Topologies	06	-	08	08	16	11.53
III	Error Detection and Error Correction	08	-	13	10	23	15.38
IV	LAN Components and Protocols	14	-	15	25	40	27
V	Network Addressing	06	-	16	-	16	11.53
VI	Wide Area Networks	12	-	15	19	34	23.03
Total		52	05	78	62	145	100

UNIT I: Introduction to Data Communication

06 Hrs

Data communication: Components, Data representation, Data flow, Networks – Categories of networks, Internetwork – Internet and Protocols, Analog and Digital Signals, Periodic and Non-Periodic Signals, Sine Wave, Phase, Wavelength, Digital Signals, Bit-rate, Bit-length, Transmission Impairment – Attenuation, Distortion and Noise, Performance - Bandwidth, Throughput, Latency, Jitter (Basic concepts only). Transmission Modes – Parallel and Serial Transmission, Asynchronous and Synchronous Transmission

UNIT II: Introduction to Networking and Topologies

06 Hrs

Overview of Networking, Need for Networking, Hardware and Software components, Network Communication Standards, OSI Reference Model, TCP/IP Model, Overview of network topologies, Basic topologies- bus, ring, star, mesh and hybrid

UNIT III: Error Detection and Correction

08 Hrs

Introduction, Types of Errors, Redundancy, Detection versus Correction, Forward Error Correction versus Retransmission, Coding, Block Coding, Error Detection, Error Correction, Cyclic Codes, Cyclic Redundancy Check, Polynomials, Advantages of Cyclic Codes, Flow Control, Error Control, Multiple Access - CSMA, CSMA/CD, Controlled Access – Reservation, Polling, Token Passing

UNIT IV: LAN Components and Protocols**14Hrs**

LAN Cables – Co-axial, twisted pair, optical fibre, LAN connectors- co-axial cable, and twisted pair cable, optical fibre, LAN devices – repeaters, hubs, switches, NIC, WLANs.
 Lower Layer Protocols - ARCnet, Ethernet, Ethernet Communication, Fast Ethernet, Gigabit Ethernet, Token Ring, Token Ring Frame format, Fault Management and tolerance, FDDI, Middle Layer Protocols- TCP/IP, Higher Layer Protocols- HTTP,FTP, SMTP, IMAP.

UNIT V: Network Addressing**06 Hrs**

Introduction, TCP/IP addressing scheme- Components of IP addressing, IP address classes, Limitations of IP address classes, IP subnetting - Creating subnets in networks, Communication across subnets, Subnetting Considerations, Subnetting Limitations, IPv6.

UNIT VI: Wide Area Networks**12 Hrs**

Overview, WAN Connectivity- POTS, Leased Lines, ISDN-Features and Working, VSAT-Devices, Networks, Architecture, Access Technologies, Microwave, Radio, Infrared, VPNs-Working of VPN, Protocols-PPTP,L2TP,IPSec.
 WAN Devices – Bridges -Transparent and Source Routing, Routers –Routing Mechanics, Routing Table, Routing Protocols – RIP,OSPF, Gateways, WAN Protocols-PPP,X.25,FrameRelay and ATM ,Internet Tools and Services- Domain Name System , Windows Internet Naming Service, Dynamic Host Configuration Protocol.

Text Books

1. Data Communications and Networking - Behrouz A Forouzan, Tata McGraw-Hill, 5th edition, ISBN: 9780070634145 for **Unit I and III**.
2. Basics of Networking, PHI learning Pvt. Ltd. 2013, ISBN: 978-81-203-2489 for **Unit II, IV, V and VI**.

References

1. http://www.tutorialspoint.com/data_communication_computer_network/index.htm
2. http://www.e-tutes.com/lesson1/networking_fundamentals_lesson1_1.htm
3. <http://www.techiwarehouse.com/engine/d9e99072/Basic-Networking-Tutorial>
4. <http://www.nptel.com>
5. <http://www.w3schools.com/>

Suggested list of student activities

Note: The following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)
 Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course co-ordinator and programme co-ordinator
2. Each group should conduct different activity and no repeating should occur.

1	Prepare a report on Significance of computer networks and its evolution specifying its advantages and disadvantages of computer networking
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2	Prepare a presentation on Sending Email via Telnet
3	Prepare a report on File sharing between computers using LAN connectivity
4	Prepare a report on Setting up a Wireless LAN
5	Prepare a report on Securing a Wireless LAN
6	Prepare a presentation on use of ping program to test your own computer

Course Delivery

The course will be delivered through lectures and Power point presentations/ Video

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE	IA	Students	Three IA tests (Average of three tests will be computed)	20	Blue books	1 to 6
				Student activities	05	Activity Reports	1 to 6
				Total	25		
	SEE	End Exam		End of the course	100	Answer scripts at BTE	1 to 6
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2,3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1 to 6 Effectiveness of Delivery of instructions & Assessment Methods

Note: I.A. test shall be conducted for 20 marks. Average marks of three tests shall be rounded off to the next higher digit.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	20
2	Understanding	45
3	Application	35

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue books (20 marks)
2. Student suggested activities report for 5 marks
3. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

FORMAT OF I A TEST QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th week of sem 10-11 Am	I/II SEM		20			
	Year:					
Name of Course coordinator : CO's: _____			Units: __			
Question no	Question		MARKS	CL	CO	PO
1						
2						
3						
4						

Note: Internal choice may be given in each CO at the same cognitive level (CL).

MODEL QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th week of sem 10-11 AM	III SEM	Computer Networks	20			
	Year: 2015-16	Course code:15CS34T				
Name of Course coordinator : Units:1,2 Co: 1,2			Note: Answer all questions			
Question no	Question		CL	CO	PO	
1	Define the following terms – (5) a. Data communication. b. Phase. c. Wavelength. d. Bandwidth. e. Throughput.		R	1	1,2	
2	Discuss different forms of data representation (5) OR Explain briefly the components of Data communication, with a diagram		U	1	1,2	
3	Explain the need for networking. (5)		A	2	1,2	
4	Explain TCP/IP reference model. (5)		U	2	1,2	

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Diploma in Computer science & Engineering**III- Semester****Course Title: COMPUTER NETWORK**Time: **3 Hours**Max Marks: **100****PART-A****Answer any SIX questions. Each carries 5 marks.****5X6=30 Marks**

- 1) Define the following terms –
 - a. Data communication.
 - b. Phase.
 - c. Wavelength.
 - d. Bandwidth.
 - e. Throughput.
- 2) Explain the functions of physical and data link layers of OSI model.
- 3) Illustrate block coding with example.
- 4) Mention some standard CRC Polynomials.
- 5) Write a note on optical fibre cable.
- 6) Explain broadcasting in Ethernet network.
- 7) Discuss different subnetting considerations.
- 8) Describe the content of Routing table.
- 9) Explain the working of ISDN.

PART-B**Answer any SEVEN full questions each carries 10 marks.****10X7=70 Marks**

1. Explain briefly the components of Data communication with diagram.
2. Explain OSI reference model with neat diagram.
3. Explain with an example design of CRC encoder and decoder.
4. List and explain coaxial twisted pair and optical fibre connectors.
5. Illustrate with diagram media access in Token Ring.
6. Compare SMTP verses POP.
7. Explain the features of IP address classes.
8. Describe VSAT network architecture and access technologies.
9. Explain briefly transparent bridge.
10. Explain ATM reference model with diagram.



MODEL QUESTION BANK**Diploma in Computer Science & Engineering****III Semester****Course Title: Computer Network**


CO	Question	CL	Marks
I	Define the following terms – a. Data communication. b. Phase. c. Wavelength. d. Bandwidth. e. Throughput.	R	05
	Define the following terms – f. Periodic signal. g. Non-periodic signal. h. Latency. i. Jitter. j. Bit rate.	R	
	Illustrate different types of data flow.	R	
	Explain briefly the components of Data communication, with a diagram.	R	
	Discuss different forms of data representation.	U	
	Mention and explain the fundamental characteristics of data communication system.	U	10
	Explain the different categories of networks.	U	
	Explain briefly the components of Data communication, with a diagram.	U	
	Mention and explain the fundamental characteristics of data communication system.	U	
	II	Explain the different categories of networks.	U
Explain the need for networking.		A	
Explain the function of physical and data link layers of OSI model.		U	
Explain the function of presentation and application layers of OSI model.		U	
Explain the function of Transport layer and Session layers of OSI model.		U	
Explain TCP/IP reference model.		U	
List different network topologies. Explain with a diagram Ring Topology.		A	10
Classify types of hardware and software network components.		A	
Explain OSI reference model with neat diagram.		U	
Compare OSI and TCP/IP Reference Models.		U	
Compare Bus and Star Topologies with diagram.	A		
Compare Mesh and Hybrid Topologies with diagram.	A	5	
Explain the terms – a. Error detection. b. Error correction. c. Redundancy. d. Forward error correction. e. Re-transmission.	U		
Illustrate with examples different types of errors.	U		
Illustrate block coding with example.	A		

III	Mention some standard CRC Polynomials.	U	10		
	Discuss the advantages of Cyclic Codes.	A			
	Explain briefly CSMA protocol.	U			
	Write a note on CSMA/CD.	A			
	Explain with a diagram and an example, the process of error detection using block coding method.	A			
	With a diagram and an example, explain the structure of encoder and decoder in error correction.	A			
	Illustrate with a block diagram process of error detection in block coding.	A			
	Explain the design of CRC encoder and decoder, with an example.	A			
	With an example, explain CRC division with polynomials.	A			
	Discuss Controlled Access methods.	U			
IV	Describe the important factors to be considered when transmitting signal between two computers.	U	5		
	Explain coaxial cable with a diagram.	A			
	Write a note on optical fibre cable.	A			
	Explain multimode transmission of optical fibre.	U			
	Explain single mode transmission of optical fibre.	U			
	Describe the role of switches.	A			
	Explain the role of NIC.	A			
	List the benefits of WLAN verses Conventional LAN.	A			
	List and explain the uses of WLAN.	A			
	List the disadvantages of ARCNet.	A			
	Explain ARCNet data frame format.	U			
	Explain broadcasting in an Ethernet network.	A			
	Explain the features of Fast Ethernet.	A			
	Explain TCP/IP middle layer protocol.	A			
	Describe SMTP protocol.	A			
	Write a note on IMAP.	A			
	V	Explain different types of twisted pair cable with advantages and disadvantages.		A	10
		List and explain coaxial, twisted pair and optical fibre connectors.		A	
		Explain with a diagram Repeaters and Hubs.		A	
		Describe Wireless LAN with a diagram.		A	
Illustrate with a neat diagram media access in Ethernet.		A			
Describe the Token Ring Data frame format.		U			
Illustrate with a diagram media access in Token Ring.		A			
Explain FDDI Lower layer protocol.		A			
Explain HTTP and FTP Higher layer protocols.		A			
Compare SMTP verses POP.		A			
V	Explain the components of an IP address.	U	5		
	Explain the limitation of IP address classes.	U			
	Discuss different sub netting considerations.	U			
	Explain the limitations of sub netting.	U			
	Explain the features of IP address of classes.	U	10		
	Explain the process of dividing a network into subnets.	U			
	Explain communication across subnets with examples.	U			
	Differentiate between LAN and WAN technologies.	U			
	Explain the features of POTS.	U			

	Explain the advantages and disadvantages of Leased lines.	A	5
	Explain the working of ISDN.	U	
	Describe the components of VSAT network.	A	
	Identify and explain the different factors to be considered to access charges in WAN connectivity.	U	
	List the features of microwave connectivity.	U	
	Describe the content of Routing table.	U	
	Differentiate between Node-based Routing and Router-based Routing.	A	
	Explain briefly Routing Protocols.	U	
	Discuss frame relay protocol.	A	
VI	Illustrate the working of VPN with a neat diagram.	A	10
	Describe VSAT network architecture and Access technologies.	A	
	Compare the features of Radio and Infrared waves.	U	
	Compare PPTP and IPSec.	U	
	Explain briefly transparent bridge.	U	
	Explain briefly Source Route Bridge.	U	
	Describe different type of Gateways.	A	
	Discuss PPP and X.25 Protocol.	U	
	Explain ATM reference model with a diagram.	A	
	Illustrate the working of DNS with a diagram.	A	
Illustrate the working of WINS with a diagram.	A		
Illustrate the working of DHCP with a diagram.	A		



Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: Programming with C lab		
	Scheme (L:T:P) : 0:2:4	Total Contact Hours: 78	Course Code: 15CS35P
	Type of Course: Tutorial and Practical's	Credit : 03	Core/ Elective: Core
CIE- 25 Marks		SEE- 50 Marks	

Prerequisites

Knowledge of Computer Operation.

Course Objectives

1. Apply the specification of syntax rules for numerical constants and variables, data types.
2. Usage of Arithmetic operator, Conditional operator, logical operator and relational operators and other C constructs.
3. Write C programs using decision making, branching and loop constructs.
4. Apply and Write C programs to implement one dimensional and two dimensional arrays.
5. Writing programs using functions.

Course Outcome

On successful completion of the course, the students will be able to attain CO:

Course Outcome		Experiment linked	CL	Linked PO	Teaching Hrs
CO1	Demonstrate branching statements	<i>1 to 3</i>	<i>A</i>	1 to 10	12
CO2	Demonstrate looping statements	<i>4 to 7</i>	<i>A</i>	1 to 10	18
CO3	Experiment on functions	<i>8 & 9</i>	<i>A</i>	1 to 10	12
CO4	Construct programs on arrays	<i>10 to 12</i>	<i>A</i>	1 to 10	18
CO5	Solve programs on structures	<i>13 & 14</i>		1 to 10	12
CO6	Write program on Preprocessor directive #define	<i>15</i>	<i>A</i>	1 to 10	06
			Total sessions		78

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
Programming with C lab	3	3	3	3	3	3	3	3	3	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

List of Graded Practical Exercises

Sl.No	Practical/Exercise
1	WAP to swap the values of two variables without using third variable.
2	WAP to find the largest/smallest of 3 numbers (if-else).
3	WAP to calculate the roots of a quadratic equation (using switch).
4	WAP to sum & reverse a given integer (while loop).
5	WAP to detect the Armstrong numbers in three digits from 100 to 999. (do-while).
6	WAP to check whether the given number is prime or not (for loop).
7	WAP to find the number of and sum of all integers greater than 100 and less than 200 that are divisible by 7 for loop).
8	WAP to calculate factorial of a given number using function.
9	WAP to find GCD of two numbers using function
10	WAP to search for a given number in an array
11	WAP to find the transpose of a given matrix
12	WAP to addition two matrices
13	WAP to create a structure with employee details and display the same
14	WAP to process student structure containing roll number, class and age as members. The program must read 5 student record in an array of structure and display the details of a student who is eldest. Use a function to find the eldest for which array of structure is an argument.
15	WAP to demonstrate # define function.

Reference

Programming with ANSI-C, E. Balaguruswamy, Sixth Edition, Tata Mcgraw Hill.

Suggested list of student activities

Note: the following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course co-ordinator and programme co-ordinator.
2. Each group should conduct different activity and no repeating should occur.
 - Customer billing System Project, Cricket Score Board Project, Calendar, Application Project, Employee Record System Project, Student Record

Course Delivery

The course will be delivered through Demonstration and Practices

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE (Continuous Internal Evaluation)	IA	Students	Two tests (average of two tests)	10	Blue books	1,2,3,4,5
		Record		10	Record	1,2,3,4,5	
		Student activity.		05	Report.		
		Total		25			
	SEE (Semester End Examination)	End Exam		End of the course	50	Answer scripts at BTE	1,2,3,4,5
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2,3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1,2,3, 4 & 5 Effectiveness of Delivery of instructions & Assessment Methods

*CIE – Continuous Internal Evaluation

*SEE – Semester End Examination

Note:

- I.A. test shall be conducted as per SEE scheme of valuation. However obtained marks shall be reduced to 10 marks. Average marks of two tests shall be rounded off to the next higher digit.
- Rubrics to be devised appropriately by the concerned faculty to assess Student activities.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	20
3	Application	70

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue books (10 marks)
2. Record (10 marks)
3. Student suggested activities report for 5 marks
4. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Scheme of Valuation for End Examination

1	Writing two programs	10+10=20
2	Executing any one program with result	20
3	Viva Voice	10
Total		50

***Evaluation should be based on the screen output only. No hard copy required.*

***Change of question is allowed only once. Marks of 05 should be deducted in the given question.*

Resource requirements for Programming with C Lab

(For an Intake of 60 Students [3 Batches])


Sl. No.	Equipment	Quantity
1	PC systems (latest configurations with speakers)	20
2	Laser Printers	01
3	Networking (Structured) with CAT 6e / wireless 24 Port switches / Wireless Router I/O Boxes for networking(as required)	03
4	Broad Band Connection	01

***Open Source Software should be encouraged*

MODEL QUESTION BANK

1	WAP to swap the values of two variables without using third variable.
2	WAP to find the largest/smallest of 3 numbers (if-else).
3	WAP to calculate the roots of a quadratic equation (using switch).
4	WAP to sum & reverse a given integer (while loop).
5	WAP to detect the Armstrong numbers in three digits from 100 to 999. (do-while).
6	WAP to check whether the given number is prime or not (for loop).
7	WAP to find the number of and sum of all integers greater than 100 and less than 200 that are divisible by 7 for loop).
8	WAP to calculate factorial of a given number using function.
9	WAP to find GCD of two numbers using function
10	WAP to search for a given number in an array
11	WAP to find the transpose of a given matrix
12	WAP to addition two matrices
13	WAP to create a structure with employee details and display the same
14	WAP to process student structure containing roll number, class and age as members. The program must read 5 student record in an array of structure and display the details of a student who is eldest. Use a function to find the eldest for which array of structure is an argument.
15	WAP to demonstrate # define function.

Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: DBMS and GUI lab		
	Scheme (L:T:P) : 0:2:4	Total Contact Hours: 78	Course Code: 15CS36P
	Type of Course: Tutorial and Practical's	Credit : 03	Core/ Elective: Core
CIE- 25 Marks		SEE- 50 Marks	

Prerequisites

Knowledge of basics DBMS theoretical concepts

Course Objectives

1. Provide strong formal foundation in database concepts.
2. Understand relational data model and systematic database design approach including conceptual design and logical design using data modelling tool.
3. Learn the techniques of query processing using SQL engines.
4. Develop a database application using any of the GUI application products.

Course Outcome

On successful completion of the course, the students will be able to attain CO:

Course Outcome		Experiment linked	CL	Linked PO	Teaching Hrs
CO1	Explain the underlying concepts of database technologies. Design and implement a database schema for a given problem-domain.	<i>1,2,3</i>	<i>U, A</i>	1 to 10	03
CO2	Apply Normalization to a database.	<i>1,2,3</i>	<i>U, A</i>	1 to 10	03
CO3	Illustrate and query a database using SQL DML/DDDL commands To motivate the students to relate all these to one or more commercial product environments as they relate to the developer tasks	<i>1 to 17</i>	<i>A</i>	1 to 10	48
CO4	Design, create, build, and debug Gambas /Visual Basic Database applications.	<i>18</i>	<i>A</i>	1 to 10	24
			Total sessions		78

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
DBMS and GUI lab	3	3	3	3	3	3	3	3	3	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

List of Graded Practical Exercises

- Using any open source data modelling tool (MySQL/Rational Rose/ERwin), design and develop a ER diagram for the following Library database. Specify relevant Referential constraints.

BOOK AUTHORS

<u>BOOK_ID</u>	<u>AUTHOR_NAME</u>
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PUBLISHER

<u>NAME</u>	<u>ADDRESS</u>	<u>PHONE</u>
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BOOK COPIES

<u>BOOK_ID</u>	<u>BRANCH_ID</u>	<u>NO_COPIES</u>
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BOOK LOANS

<u>BOOK_ID</u>	<u>BRANCH_ID</u>	<u>CARD_NO</u>	<u>DATE_HIRED</u>	<u>DUE_DATE</u>
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LIBRARY BRANCH

<u>BRANCH_ID</u>	<u>BRANCH_NAME</u>	<u>ADDRESS</u>
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BORROWER

<u>CARD_NO</u>	<u>NAME</u>	<u>ADDRESS</u>	<u>PHONE</u>
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- Consider a GRADE_BOOK database in which instructors within an academic department record point earned by individual students in theory classes. The data requirements are summarised as follows:

- Each student is identified by a unique identifier, first and last name and an email address.
- Each instructor teaches certain courses each term. Each course is identified by a course number, a section number and the term in it is taught. For each course he or she teaches, the instructor specifies the minimum number of points required in order to earn letter grades, A, B, C, D and F. For Ex. 90 points for an A, 80 points for a B, 70 points for a C and so forth.
- Students are enrolled in each course taught by the instructor.
- Each course has a number of grading components (such as mid-term exam, final exam, project and so forth). Each grading component has a maximum number of points (100 or

50) and a weight (20% or 10%). The weight of all the grading components of a course is 100.

- Finally, the instructor records the points earned by each student in each of the grading components in each course. For Ex. The student 1234 earns 84 points for a mid-term exam, grading component of the section 2 course CS 2310 in the fall term of 2009. The mid-term exam grading component may have been defined to have a maximum of 100 points and a weight of 20% of the course grade.

3. Create the following tables for a COMPANY database

EMPLOYEE

Fname	Minit	Lname	Ssn	Bdate	Address	Sex	Salary	Super_ssn	Dno
-------	-------	-------	-----	-------	---------	-----	--------	-----------	-----

DEPARTMENT

Dname	<u>Dnumber</u>	Mgr_ssn	Mgr_start_date
-------	----------------	---------	----------------

DEPT_LOCATIONS

<u>Dnumber</u>	<u>Dlocation</u>
----------------	------------------

PROJECT

Pname	<u>Pnumber</u>	Plocation	Dnum
-------	----------------	-----------	------

WORKS_ON

<u>Essn</u>	<u>Pno</u>	Hours
-------------	------------	-------

DEPENDENT

<u>Essn</u>	<u>Dependent_name</u>	Sex	Bdate	Relationship
-------------	-----------------------	-----	-------	--------------

4	Illustrate the use of constraints
	NOT NULL
	PRIMARY KEY
	UNIQUE
	CHECK
	DEFAULT
	REFERENCES
5	DATA MANIPULATION : INSERTING VALUES INTO A TABLE
6	Illustrate the use of SELECT statement
7	Conditional retrieval - WHERE clause
8	Query sorted - ORDER BY clause
9	Grouping the result of query - GROUP BY clause and HAVING clause
10	Aggregate functions in SQL (Count, Sum, Max, Min, Avg)
11	SQL operators(And, Or, Like, Between, In)
12	Query multiple tables using JOIN operation.
13	Write nested and complex queries using multiple tables.
14	Perform UPDATE, ALTER, DELETE, DROP operations on tables
15	Illustrate the use of CREATE VIEW command and manipulating
16	Use COMMIT and ROLL BACK commands
17	Use SAVEPOINT commands
18.	GUI

	<ol style="list-style-type: none"> 1. To study about various Gambas/Visual Basic (front end) or any other front end tool 2. Design a form to use various tools like label, text, combo box, list boxes, check box, option box, horizontal and vertical scroll bars, etc. Illustrate the above with an example such as survey form, registration form for an event or another other example. 3. Design a menu driven form to process student's results or a shopping list or any other example. 4. Generate a report for student's results or employee details or shopping list or any other example. 5. Based on any database specified in Question No. 1, 2 or 3. The application must be menu driven having suitable active controls with database connectivity. Generate different reports as per user requirements.
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References

1. Fundamentals of Database system 5th Edition, Ramez Elmasri, Shamkan B. Navthe, Pearson Education
2. Visual Basic 6 How to program by Deitel & Associates
3. http://www.tutorialspoint.com/dbms/sql_overview.htm
4. <http://www.sql-tutorial.net/>
5. <http://www.visualbasicbooks.com/vb6introtutorial.html>
6. <http://gambas.sourceforge.net/>
7. <http://gambasdoc.org/help>

Suggested list of student activities

Note: *The following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)*

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course co-ordinator and programme co-ordinator.
2. Each group should conduct different activity and no repeating should occur.
 - Build DBMS application for processing students details such as personal details, results, attendance etc. Use minimum 3-4 tables
 - Build DBMS application for maintain a mini library of CD's. Use minimum 3-4 tables
 - Using any ER diagram modelling tool demonstrate modelling of any database containing 3-4 tables.

Course Delivery

The course will be delivered through Demonstration and Practices

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE (Continuous Internal Evaluation)	IA	Students	Two tests (average of two tests)	10	Blue books	1,2,3,4
		Record		10	Record		
		Student activity		05	Report	1,2,3,4	
		Total		25			
	SEE (Semester End Examination)	End Exam		End of the course	50	Answer scripts at BTE	1,2,3,4
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2,3(half session) Delivery of course
	End of Course Survey			End of the course		Questionnaires	1,2,3, 4 Effectiveness of Delivery of instructions & Assessment Methods

*CIE – Continuous Internal Evaluation

*SEE – Semester End Examination

Note:

1. I.A. test shall be conducted as per SEE scheme of valuation. However obtained marks shall be reduced to 10 marks. Average marks of two tests shall be rounded off to the next higher digit.
2. Rubrics to be devised appropriately by the concerned faculty to assess Student activities.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	20
3	Application	70

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue books (10 marks)
2. Record (10 marks)

3. Student suggested activities report for 5 marks
4. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information ; some relate to the topic	Collects some basic information ; refer to the topic	Collects relevant information ; concerned to the topic	Collects a great deal of information ; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.2=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Scheme of Valuation for End Examination

1	Creating and inserting records for minimum two tables. Use minimum 2 constraints	10
2	Executing minimum 3 queries	15
3	Build a GUI program for the table created with data grid view and options such as Add, Delete, Modify etc.	15
4	Viva-Voce	10
Total		50

***Evaluation should be based on the screen output only. No hard copy required.*

***Change of question is allowed only once. Marks of 05 should be deducted in the given question.*

Resource requirements for DBMS & GUI Lab

(For an Intake of 60 Students [3 Batches])

Sl. No.	Equipment	Quantity
1	PC systems (latest configurations with speakers)	20
2	Laser Printers	01
3	Networking (Structured) with CAT 6e / wireless 24 Port switches / Wireless Router I/O Boxes for networking(as required)	03
4	Broad Band Connection	01

***Open Source Software should be encouraged*



MODEL QUESTION BANK

1. a) Create table Employee and Dependent as per the following schema: Identify the Primary and referential constraints on the table. Specify suitable constraint on the salary column such that $12000 < \text{Salary} < 120000$.

i) Employee Table

Fname	Lname	<u>ssn</u>	Bdate	Address	Sex	Salary	Super ssn	Dno
-------	-------	------------	-------	---------	-----	--------	--------------	-----

ii) Dependent Table

Essn	Dependent_name	Sex	Bdate
------	----------------	-----	-------

b) Insert records into the above tables.

c). Queries to be executed

- Add another column Relationship to dependent Table
- Retrieve all female dependents of the employees who have joined service after 31-01-2010
- Retrieve the no. Of employees and total salary drawn by the employees belonging to department no. 10.

d) Create a GUI to show any one of the table contents(include data grid view and perform operations such as add, delete, modify etc)

2. a) Create table BOOK ,BOOK_AUTHOR and PUBLISHER with following Schema. Identify the Primary and referential constraints on the tables. Specify default constraint on gender column of BOOK_AUTHOR table.

i) BOOK

<u>Book_id</u>	Title	Publisher_name
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ii) BOOK_AUTHOR

<u>Book_id</u>	<u>Author_name</u>	Gender
----------------	--------------------	--------

iii) PUBLISHER

<u>Name</u>	Address	Phone
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b) Insert records into the above tables.

c) Queries to be executed

- Retrieve the book details of all the books authored by “Sharma”.
- Delete the record for the publisher by name “sapna”.
- For each publisher retrieve the total number of book titles published.

d) Create a GUI to show any one of the table contents(include data grid view and perform operations such as add, delete, modify etc).

3. a) Create table EMPLOYEE,PROJECT and WORKS_ON as per the following schema:

Identify the Primary and referential constraints on the table.

i) Employee Table

Fname	Lname	Ssn	Bdate	Address	Sex	Salary	Super ssn	Dno
-------	-------	-----	-------	---------	-----	--------	--------------	-----

ii) Project table

<u>P_name</u>	<u>Pno</u>	P_location
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iii) Works_On

<u>Essn</u>	<u>Pno</u>	Hours
-------------	------------	-------

b) Insert records into the above tables.

c) Queries to be executed

- Retrieve employee name, address and salary with all employee names first letter in capital.
- For each employee retrieve the total projects and total no. of hours he/she works on.
- Illustrate the use of Save point, Rollback and Commit transaction commands.

d) Create a GUI to show any one of the table contents (include data grid view and perform operations such as add, delete, modify etc).

4. a). Create table BOOK,BOOK_BORROWED and BOOK_BORROWER as per the following schema: Identify the Primary and referential constraints on the table.

i) Book

<u>Book_id</u>	Title	Publisher_name
----------------	-------	----------------

ii) Book_Borrowed

<u>Book_id</u>	<u>Card_No</u>	Date_out	Due_Date
----------------	----------------	----------	----------

iii) Book_Borrower

<u>Card_No</u>	Name	Address	Phone
----------------	------	---------	-------

b) Insert records into the above tables.

c) Queries to be executed

- Retrieve the names of people who have borrowed “Computer Network” book.
- Retrieve the number of days permitted to borrow “Computer Organization” by “Cherry”.
- Illustrate the use of any four numeric functions.

d) Create a GUI to show any one of the table contents (include data grid view and perform operations such as add, delete, modify etc).

5. a) Create table CUSTOMER , ACCOUNT, LOAN as per the following schema: Identify the Primary and referential constraints on the table.

i) Customer

<u>Account_no</u>	Name	Address	Phone
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ii) Account

<u>Account_no</u>	<u>Transaction_type</u>	Amount	Balance
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iv) Loan

<u>Loan_no</u>	<u>Account_no</u>	Amount	Loan_type	Interest_rate
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b) Insert records into the above tables.

c) Queries to be executed

- Retrieve all customers who have availed the loan amount of more than 5 lakhs.
- Create a view with the following attributes: Customer name, bank balance and loan amount.
- Illustrate the use of Grant and Revoke commands.

d) Create a GUI to show any one of the table contents (include data grid view and perform operations such as add, delete, modify etc).

6. a) Create table ART_OBJECT, PAINTING and STATUE as per the following schema:

Identify the Primary and referential constraints on the table.

i) Art object

<u>Id_no</u>	<u>Artist_Name</u>	<u>Year_Created</u>	Title	Art_type	Description
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Art type can either Painting or Statue

ii) PAINTING

<u>Paint_type</u>	<u>Base_Material</u>	Style	Price
-------------------	----------------------	-------	-------

Paint type can be oil or water colour or organic colour

Base material can be paper, canvas or wood

Style can be Modern or Abstract

iv) Statue

<u>Material_type</u>	Height	Weight	Style	Price
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Material type can be stone, wood, glass

Style can be Modern or Abstract

b) Insert records into the above tables.


c) Queries to be executed

- Retrieve the details of the costliest painting using nested queries.
- Retrieve the names of the artist who have worked on Abstract style
- Delete all the records pertaining to the artist by name "Sahithya".

d) Create a GUI to show any one of the table contents (include data grid view and perform operations such as add, delete, modify etc).



Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: Network Administration lab		
	Scheme (L:T:P) : 0:2:4	Total Contact Hours: 52	Course Code: 15CS37P
	Type of Course: Practical's & Student Activity	Credit : 03	Core/ Elective: Core
CIE- 25 Marks		SEE- 50 Marks	

Prerequisites

Knowledge of computer operation.

Course Objectives:

1. Learn basic fault detection, assembly and disassembly of PC
2. Learn and understand OS installation and network services.

Course Outcome

On successful completion of the course, the students will be able to attain CO:

Course Outcome		Experiment linked	CL	Linked PO	Teaching Hrs
CO1	Identify the different faults related to CPU and RAM	<i>1 to 4</i>	<i>U, A</i>	1 to 10	18
CO2	Demonstrate the skills for assembly and disassembly of a PC and install OS	<i>5-6</i>	<i>A</i>	1 to 10	12
CO3	Demonstrate the skills for computer networking and its services.	<i>7-11</i>	<i>A</i>	1 to 10	48
			Total sessions		78

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
Network Administration Lab	3	3	3	3	3	3	3	3	3	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

List of Graded Practical Exercises

1. Study and measure voltages of SMPS
2. Drawing the motherboard layout (any latest processor) and studying the chipset through data books or Internet
3. CMOS setup of any latest PC
4. Fault findings: (a) Problems related to CPU (b) Problems related to RAM
5. Disassembly and Assembling of PC and Installation of Operating System
a) Windows b) Linux. Perform dual booting also.
6. Learn parallel port, serial port and USB port testing and Installation of Scanner, Printers and ADSL/DSL Modems
7. Crimping of RJ45: Straight and Cross.
a) Punching Cat 6 cable to I/O Box. Use punching tool.
b) Check connectivity using LAN tester.
8. Install a Switch and Wireless router
9. Study different IP class (A, B, C) addressing. (Manual & Dynamic). Check connectivity for peer-to-peer and client-server
10. Windows Server & also install the following services
a) Active directory b) DNS c) DHCP
11. Visit any industry / institutes (Engineering colleges, university campuses, etc) and study the following
 - i) Type and Configuration of client PC's and OS (Eg: Linux, Windows, MAC etc.)
 - ii) Type and Configuration of Servers and Domains used
 - iii) Type of networking (Topology and media used)
 - iv) Different network devices used (switch, routers, access points etc)
 - v) Different types of peripheral devices used (Eg: printers, scanner, web cam etc.)
 - vi) Applications used by the users.

Prepare a report of about 3 to 4 (A4 size) pages and include in the lab record.

E-learning content

1. <http://www.howtogeek.com/>
2. <http://www.infotechguyz.com/>
3. <http://www.rebeladmin.com/2011/03/step-by-step-guide-to-setup-active-directory-windows-server-2008/>

Suggested list of student activities

Note: The following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course co-ordinator and programme co-ordinator
2. Each group should conduct different activity and no repeating should occur

Suggested activities

1	Study and prepare a comparative report about the make, model, configuration, etc., of different types of Printers.
2	Study and prepare a comparative report about the make, model, configuration, etc., of different types of Scanners.

3	Study and prepare a comparative report about the make, model, configuration, etc., of different types of computer systems / laptops etc.
4	Study and prepare a comparative report about the make, model, configuration, etc., of different network components and devices such as router, switches, etc.
5	Video conferencing using skype etc.

Course Delivery

The course will be delivered through practical's and presentations

Course Assessment and Evaluation Scheme:

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment meth	CIE	IA	Students	Twice test (average of two tests)	10	Blue books	1,2,3
				Record	10	Record	
				Student activity	05	Report	
	Total	25					
	SEE	End Exam		End of the course	50	Answer scripts at BTE	1,2,3
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1,2,3 Effectiveness of Delivery of instructions & Assessment Methods

*CIE – Continuous Internal Evaluation

*SEE – Semester End Examination

Note:

1. I.A. test shall be conducted as per SEE scheme of valuation. However obtained marks shall be reduced to 10 marks. Average marks of two tests shall be rounded off to the next higher digit.
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Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue books (10 marks)
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3. Student suggested activities report for 5 marks
4. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
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Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
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TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Scheme of Examination

1	Writing Procedure for two experiments (One each from Part A & Part B)	10+10=20
2	Conduction any ONE	20
3	Viva-Voce	10
Total		50

***Evaluation should be based on the screen output only. No hard copy required.*

***Change of question is allowed only once. Marks of 05 should be deducted in the given question.*

Resource requirements for Network Administration Lab

(For an Intake of 60 Students [3 Batches])

Sl. No.	Equipment	Quantity
1	Servers	02
2	PC systems (latest configurations with speakers)	20
3	Laser Printers	02
4	Scanners	02
5	Web cameras	
6	Crimping Tools	10
7	Multimeter	10
8	I/O box Punching tool	10
9	LAN Tester	10
10	Wireless Router	04
11	CAT 6e cable	As Required
12	24 Port switches	04
13	I/O Boxes for networking	As required
14	RJ 45 connector	As required
15	Broad Band Connection	01
16	Windows server software	10 user licence

***Open Source Software should be encouraged*



MODEL QUESTION BANK

Part-A

1. Conduct an experiment to measure voltages of SMPS.
2. Conduct an experiment to study the CMOS setup of any latest PC.
3. Conduct an experiment to for parallel port, serial port and USB port testing.
4. Conduct an experiment to install Scanner.
5. Conduct an experiment to install Printer.
6. Conduct an experiment for Fault finding, problems related to CPU.
7. Conduct an experiment for Fault finding, problems related to RAM.
8. Conduct an experiment to Disassembly PC.
9. Conduct an experiment to Assemble PC.
10. Conduct an experiment to install Windows Operating System.
11. Conduct an experiment to install Linux Operating System.

Part-B

12. Conduct an experiment to perform crimping of RJ45 for Straight cabling and Check connectivity using LAN tester.
13. Conduct an experiment to perform crimping of RJ45 for Cross cabling Check connectivity using LAN tester.
14. Conduct an experiment to have manual IP addressing and check connectivity.
15. Conduct and experiment to install Windows Server & Active directory. Check connectivity using either peer-to-peer / Client-server
16. Conduct and experiment to install Windows Server & DNS. Check connectivity using either peer-to-peer / Client-server
17. Conduct and experiment to install Windows Server & DHCP. Check connectivity using either peer-to-peer / Client-server



3ನೇ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ-1 (ಕನ್ನಡೇತರರಿಗೆ ಕನ್ನಡ ಪರಿಚಯ)

3rd Semester	Course: Kannada Kali-1	Course Code: 15KA3NT (2016-17)
	No. of Credits: 02	No. of teaching hours/week: 02 No. of teaching hours/Semester:26
	Mode of Assessment and Evaluation: Continuous Internal Evaluation (CIE) only. I.A Tests:30 Marks (3 Tests) Student activities: 20 Marks	Maximum Marks: 50 (CIE only) Minimum Passing marks: 20 (IA Tests + Student activities)

ಉದ್ದೇಶ:

1. ಕೇಳುವುದು, ಗ್ರಹಿಸುವುದು, ನಿರರ್ಗಳವಾಗಿ ಮತ್ತು ಸ್ಪಷ್ಟವಾಗಿ ಓದುವ ಮತ್ತು ಮಾತನಾಡುವ (ಅಭಿವ್ಯಕ್ತಿಸುವ) ಸಾಮರ್ಥ್ಯವನ್ನು ಬೆಳೆಸುವುದು.
2. ಜ್ಞಾನಾರ್ಜನೆ, ಸಾಹಿತ್ಯಾಭಿರುಚಿ, ಚಿಂತನೆ ಮತ್ತು ಆನಂದಕ್ಕಾಗಿ ಸ್ವತಂತ್ರವಾಗಿ ಓದಲು, ಬರೆಯಲು ಮತ್ತು ಮಾತನಾಡಲು ಸಮರ್ಥರಾಗುವಂತೆ ಮಾಡುವುದು.
3. ಪದ ಸಂಪತ್ತನ್ನು ಹೆಚ್ಚಿಸಿಕೊಂಡು ಸ್ಪಷ್ಟ ಉಚ್ಚಾರಣೆಯೊಡನೆ ಲಿಖಿತ ಮತ್ತು ಮೌಖಿಕ ಚಟುವಟಿಕೆಗಳನ್ನು ಮಾಡಿಸಿ, ಸ್ವತಂತ್ರವಾಗಿ ಭಾಷೆಯ ಬಳಕೆ ಮಾಡುವುದು.
4. ನಾಡು-ನುಡಿ, ಸಂಸ್ಕೃತಿ ಮತ್ತು ಸಾಹಿತ್ಯಗಳ ಪರಿಚಯ ಮತ್ತು ಆತ್ಮೀಯ ಭಾವಾಭಿಮಾನವನ್ನು ಬೆಳೆಸುವುದು.
5. ಕ್ರಿಯಾತ್ಮಕ ಚಟುವಟಿಕೆಗಳಿಂದ ಭಾಷಾ ಕೌಶಲ್ಯದ ಸರಳ ಪ್ರಯೋಗ ಮಾಡಿಸುವುದು./ಕಲಿಸುವುದು.
(ಕ್ರಿಯಾತ್ಮಕ ಚಟುವಟಿಕೆ ಎಂದರೆ, ವರ್ಣಮಾಲೆ ಪರಿಚಯ, ವ್ಯಾಕರಣದ ಸರಳ ಪರಿಚಯ, ಗುಣಿತಾಕ್ಷರ, ಸಂಯುಕ್ತಾಕ್ಷರಗಳು, ನಾಮಪದ, ಲಿಂಗ, ವಚನ, ಪ್ರತ್ಯಯಗಳು, ವಾಕ್ಯರಚನೆ (ಕತ್ಯ, ಕರ್ಮ, ಕ್ರಿಯಾಪದ) ಇತ್ಯಾದಿ)

ಪಠ್ಯಕ್ರಮ ಮತ್ತು ಸರಳ ಭಾಷಾ ಕೌಶಲ್ಯ

(ಕನ್ನಡ ಕಲಿ-ಪಠ್ಯಪುಸ್ತಕ -ಶ್ರೀ ಲಿಂಗದೇವರು ಹಳೇಮನೆ - ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ ಪ್ರಕಾಶನ)

ಭಾಗ-1

ಪಾಠಗಳ ಕ್ರಮಾಂಕ Lesson No	ಪಠ್ಯವಸ್ತುವಿನ ವಿವರ - Curriculum Content	ಸೆಮಿಸ್ಟರ್ ಬೋಧನ ಆವಧಿ Total no.of Classes /Sem
	ಕನ್ನಡ ಭಾಷೆಯ ಪರಿಚಯ/ವರ್ಣಮಾಲೆ/ಕನ್ನಡ ಕಲಿ'ಯುವ ವಿಧಾನ ಕುರಿತ ಮಾಹಿತಿ	02
1	Introducing each other Personal Pronouns, Possessive forms and Interrogative words 1. ನಾವು ಮತ್ತು ಭಾಷೆ 2. ಅಕ್ಷರಗಳಿಂದ ಪದಗಳು	03
2	Introducing each other Personal Pronouns, Possessive forms - Yes/No Type Interrogative	02
3	About Ramayana. Possessive forms of nouns, dubitive question, Relative nouns. ಪದಗಳಿಂದ ವಾಕ್ಯಗಳು	02
4	Enquiring about college. Qualitative and quantitative adjectives.	02
5	Enquiring about room. Predicative forms,	02

	locative case.	
6	Vegetable Market. Dative case, basic numerals.	02
7	About Medical college. Ordinal numerals, plural markers.	02
8	In a cloth shop. Color adjectives, defective verbs	02
9	Plan to go for picnic - imperative, permissive and hortative	02
10	Enquiring about one's family, Verb iru, and corresponding negation ಕನ್ನಡ ಚಿತ್ರಪಟಗಳಲ್ಲಿನ ಅಕ್ಷರಗಳನ್ನು ಗುರುತಿಸಿ ಓದಿ ದಿನಪತ್ರಿಕೆ ಓದುವ ಹವ್ಯಾಸ--ಸಂವಹನ ಮಾಧ್ಯಮದ ಬಗ್ಗೆ ಪರಿಚಯ ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ ಪರೀಕ್ಷೆಗಳು	02
	ಒಟ್ಟು ಗಂಟೆಗಳು	26

ಸೂಚನೆಗಳು:

- ಈ ಪಠ್ಯದ ಮೂಲ ಉದ್ದೇಶ ಕನ್ನಡೇತರ ವಿದ್ಯಾರ್ಥಿಗಳು ಸರಳ ಕನ್ನಡ ಭಾಷೆಯಲ್ಲಿ ವ್ಯವಹರಿಸುವಂತೆ ಮಾಡುವುದಾಗಿದೆ. “ಕನ್ನಡ ಕಲಿ” ಪುಸ್ತಕದ ಮೇಲಿನ ಪಾಠಗಳ ಜೊತೆಗೆ “ಕ್ರಿಯಾತ್ಮಕ ಚಟುವಟಿಕೆ”ಯಿಂದ ಗಳಿಸುವ ಅಕ್ಷರ ಜ್ಞಾನದಿಂದ ಪದ ಸಂಪತ್ತು ಹೆಚ್ಚಿಸಿ, ಪದಗಳಿಂದ ಸ್ವಂತ ವಾಕ್ಯಗಳ ರಚನೆ ಮಾಡಿಸುವುದು. (ಅಮ್ಮ, ಮೊಬೈಲ್, ಕನ್ನಡ ಭಾಷೆ, ಕವಿಗಳು, ನಾಟಕ, ಜನಪದ ಕಲೆ, ನಾಡಿನ ಪ್ರಸಿದ್ಧ ವ್ಯಕ್ತಿಗಳು, ಸಹೋದರ, ಸ್ನೇಹಿತ, ತರಕಾರಿ, ದೋಸೆ, ತಿಂಡಿ, ನಿದ್ರೆ, ಬಿಸಿ, ಚಳಿ, ಆಕಾಶ, ಓದು, ಇತ್ಯಾದಿ ನಿತ್ಯ ಬಳಕೆಯ ಸರಳ ಪದಗಳಿಂದ ವಾಕ್ಯರಚನೆ ಮತ್ತು 25-50 ಪದಗಳ ಕಿರು ಲೇಖನ ರಚನೆ).
- ತರಗತಿ ಚಟುವಟಿಕೆಗಳ ಪುಸ್ತಕದಲ್ಲಿ (ಕ್ಲಾಸ್ ಅಸೈನ್‌ಮೆಂಟ್) ಕನ್ನಡ ವರ್ಣಮಾಲೆಯ ಸ್ವರ, ವ್ಯಂಜನಗಳ ಅಕ್ಷರಗಳ ಬರವಣಿಗೆ ಅಭ್ಯಾಸ, ವ್ಯಂಜನಗಳಿಗೆ ಸ್ವರಗಳನ್ನು ಸೇರಿಸುವಿಕೆ, ಅಕ್ಷರಗಳಿಂದ ಪದರಚನೆ, ಪದಗಳಿಗೆ ಪ್ರತ್ಯಯಗಳನ್ನು ಸೇರಿಸುವುದು (ಗೆ, ಯಿಂದ, ಅನ್ನು, ಅಲ್ಲಿ, ಗಳು, ಎಂದು.....ಇತ್ಯಾದಿ ಪಠ್ಯದಲ್ಲಿ ಬರುವ ಪದಗಳಿಗೆ ನಿತ್ಯ ಬಳಕೆಯ ಪ್ರತ್ಯಯಗಳನ್ನು ಸೇರಿಸುವುದು) ಪದಗಳಿಂದ ವಾಕ್ಯ ರಚನೆ ಮಾಡುವುದು. ಮತ್ತು ಪಾಠ 1-10ರ ಪಠ್ಯಾಂತ್ಯದಲ್ಲಿ ಬರುವ ಅಭ್ಯಾಸಗಳಲ್ಲಿ ಆರಿಸಿದ ಅಭ್ಯಾಸ ಭಾಗಗಳನ್ನು ಬರಿಸುವುದು. ಮತ್ತು ಪಾಠ-20 ರ ಸ್ಪಿಲ್- ಅನ್ನು ಆಧಾರವಾಗಿಟ್ಟುಕೊಂಡು ಅಭ್ಯಾಸ ಮಾಡಿಸುವುದು.

ಆಕರ ಗ್ರಂಥಗಳು:

1. ಕನ್ನಡ ಕಲಿ-ಶ್ರೀ ಲಿಂಗದೇವರು ಹಳೇಮನೆ - ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.
2. ಪ್ರಾಥಮಿಕ ಶಾಲೆಯ ಕನ್ನಡ ಪಠ್ಯಪುಸ್ತಕಗಳು
3. ಸರಳ ಕನ್ನಡ ವ್ಯಾಕರಣ ಪುಸ್ತಕಗಳು- ಎಂ.ವಿ ನಾಗರಾಜರಾವ್/ಇತರೆ ಲೇಖಕರು.
4. ಪ್ರಯೋಗ ಪ್ರಣತಿ-ಪ್ರಥಮ ಪಿಯುಸಿ ಪೂರಕ ಪಠ್ಯ.
5. ಸರಳ ಪತ್ರವ್ಯವಹಾರದ ಪುಸ್ತಕಗಳು

ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯಮಾಪನ ವಿಧಾನ (3ನೇ ಸೆಮಿಸ್ಟರ್)

ನಿರಂತರ ಅಂತರಿಕ ಮೌಲ್ಯಮಾಪನ- Continuous Internal Evaluation (CIE) only.

ಕ್ರ.ಸಂ.	ಚಟುವಟಿಕೆಗಳು	ವಿವರ	ಗರಿಷ್ಠಾಂಕ	ಉತ್ತೀರ್ಣತೆಗೆ ಕನಿಷ್ಠಾಂಕ
01	ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ (I A Tests)	ಮೂರು ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ ಪರೀಕ್ಷೆಗಳು (ಸರಾಸರಿ ಅಂಕಗಳನ್ನು ಪರಿಗಣಿಸುವುದು)	30	
02	ಕನ್ನಡ ಭಾಷಾ ಕೌಶಲ್ಯಾಭಿವೃದ್ಧಿ ಚಟುವಟಿಕೆಗಳು (Student Activities)	ಮೂರು ಚಟುವಟಿಕೆಗಳು (ಸರಾಸರಿ ಅಂಕಗಳನ್ನು ಪರಿಗಣಿಸುವುದು)	20	
		ಒಟ್ಟು ಅಂಕಗಳು	50	20

Course outcome:

1. Developing listening and speaking skills.
2. Easy Interaction with peers.
3. Students can use the language at ease in daily life situations

ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ ಪರೀಕ್ಷೆಗಳ ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಗಳು:

ನಿರಂತರ ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ ಪರೀಕ್ಷೆಗಳಿಗೆ ಈ ಕೆಳಗಿನ ಮಾದರಿಯಲ್ಲಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ಸಿದ್ಧಪಡಿಸಿ ನಡೆಸುವುದು ಮತ್ತು “ಕನ್ನಡ ಕಲಿ” ಪಠ್ಯದ ಕಲಿಕೆ ವಿವರಣೆ (ಭಾಷಾಭ್ಯಾಸ) ಸಂಭಾಷಣಾ ಭಾಗಗಳು ಮತ್ತು ಅಂತ್ಯದಲ್ಲಿ ಅಭ್ಯಾಸ ಪುಸ್ತಕದಲ್ಲಿ ಬರುವ ಪ್ರಶ್ನೆಗಳ ವಿಧಾನವನ್ನು ಪರ್ಯಾಯವಾಗಿ ಬಳಸಿಕೊಂಡು ಪ್ರಶ್ನೆಪತ್ರಿಕೆಗಳನ್ನು ತಯಾರಿಸಿಕೊಳ್ಳಬಹುದು.

ಡಿಪ್ಲೋಮಾ 3ನೇ ಸೆಮಿಸ್ಟರ್ - ಕನ್ನಡ ಕಲಿ-1 (ಕನ್ನಡೇತರರಿಗೆ ಕನ್ನಡ ಪರಿಚಯ)

ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ ಪರೀಕ್ಷೆ

ಸಮಯ: 60 ನಿಮಿಷಗಳು

ಅಂಕ: 30

-
- I. Fill in the blanks using the appropriate words.(Any FOUR) 1X4=04
- i) nimma raajya.....?
 - ii) adu.....pustaka?
 - iii) avana hesaru suratkal injiniyaring kaaleju.
 - iv) ondu ruupaayige.....paise.
 - v) aval.ige hindustaani sanita tumba.....
 - vi) nanage ninna sahavaasa khanDitaa.....
 - vii) avanu nimma ?
- II. Use the following words (any FOUR) in your own sentences. 1X4=04
1.adhyaapaki 2.snehita 3. Vyaapaara 4.keTTa 5. Hasiru 6.angadi 7.taaja
- III. Answer the following questions (any FOUR) 1X4=04
- (a) nimma uuru yaavudu?
 - (b) nivu diploma vidyaarthinaa?
 - (c) nimma pennige estu ruupaaye?
 - (d) nimma maatrubaahashe yaavudu?
 - (e) nimage tingalige eshtu ruupaayi beeku?
 - (f) nimma mane/ruumu elli ide?
- IV. Translate the following sentence in Kannada. (any FOUR) 4X2=08
1. Kannada is the language of Karnataka.
 2. My book is in my house.
 3. We have two houses in Bangalore.
 4. How much is this Pumpkin weighs?
 5. I want two packets of biscuits.
 6. How much do you pay rent for your room?
 7. What else do you want?

V. ಕೆಳಗಿನವುಗಳನ್ನು ಹೊಂದಿಸಿ ಬರೆಯಿರಿ. (Match the following) 1X4=04

1. ನೀವು ಯಾವಾಗ ಮನೆಯಲ್ಲಿ	1.ಇದೆ
2. ಪುಸ್ತಕ ಮೇಜಿನ ಮೇಲೆ	2.eldest son
3. Jaaga-ಜಾಗ	3.ಇರ್ತೀರಿ
4. Hiri maga	4.space

VI. (1) Change into interragative using the underlined word. (Any Three) 1X3=03

1. Ivattu guruvaara.
2. evattu hattanee taariku
3. Aval hesaru liila.
4. Avara maatra**abhaashe** telagu alla.
5. Vavige ipptaydu ruupaayei beeku.
6. Adu maalatiya mane.

(2) change into Interrogate. (Any THREE) 1X3=03

- 1.ಹೌದು, ಇದು ಪುಸ್ತಕ.
2. ಆಗಲಿ, ಹೋಗೋಣ.
3. ಈಗ ಒಂದೂವರೆ ಗಂಟೆ.
4. ಅವರು ಮನೆಗೆ ಬರುತ್ತಾರೆ.
5. ನಾವಿ ಮನೆಗೆ ಹೋಗೋಣ.
6. ಅವರು ಮನೆಗೆ ಹೋಗಲಿ.

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ ರಚನಾ ಸಮಿತಿ

• ಸಂಪಾದಕೀಯ ಸಮಿತಿ:

1. ಶ್ರೀ ಟಿ ಎಲ್ ರವೀಂದ್ರ, ಉಪನ್ಯಾಸಕರು, ಸರ್ಕಾರಿ ಜಿ.ಆರ್.ಐ.ಸಿ.ಪಿ ಬೆಂಗಳೂರು.
2. ಶ್ರೀ ಟಿ. ತಿಮ್ಮಪ್ಪ, ಉಪನ್ಯಾಸಕರು(ಆಯ್ಕೆ ಶ್ರೇಣಿ), ಯಾಂತ್ರಿಕ ವಿಭಾಗ, ಸರ್ಕಾರಿ ಪಾಲಿಟೆಕ್ನಿಕ್, ತುಮಕೂರು.

• ಸಲಹಾ ಸಮಿತಿಯ ಬಾಹ್ಯ ಸಂಪನ್ಮೂಲ ವ್ಯಕ್ತಿಗಳು.

1. ಪ್ರೊ. (ಡಾ.) ಡಿ. ಪಾಂಡುರಂಗ ಬಾಬು, ಕುಲಸಚಿವರು, ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.
2. ಪ್ರೊ. (ಡಾ.) ಅಶೋಕ್ ಕುಮಾರ್ ರಂಜರೆ, ಪ್ರಾಧ್ಯಾಪಕರು, ಪ್ರಸಾರಾಂಗ ವಿಭಾಗ, ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.
3. ಪ್ರೊ. (ಡಾ.) ಕೆ ವೈ ನಾರಾಯಣ ಸ್ವಾಮಿ, ಸಹ ಪ್ರಾಧ್ಯಾಪಕರು, ಸ್ನಾತಕೋತ್ತರ ವಿಭಾಗ, ಸರ್ಕಾರಿ ಕಲಾ ಕಾಲೇಜು, ಬೆಂಗಳೂರು.
4. ಪ್ರೊ. (ಡಾ.) ಜೆ ಬಾಲಕೃಷ್ಣ, ಪ್ರಾಧ್ಯಾಪಕರು ಹಾಗೂ ಮುಖ್ಯಸ್ಥರು, ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ವಿಭಾಗ, ಕೃಷಿ ವಿಶ್ವವಿದ್ಯಾಲಯ, (ಜಿಕೆವಿಕೆ) ಹೆಬ್ಬಾಳ, ಬೆಂಗಳೂರು.

KARNATAKA STATE BOARD OF TECHNICAL EXAMINATION, BENGALURU.															
TEACHING AND EXAMINATION SCHEME FOR KANNADA COURSE IN DIPLOMA PROGRAMME															
SEMESTER: III											COMMON TO ALL DIPLOMA PROGRAMMES			C-15 Curriculum	
SL.NO	COURSE NAME	Teaching Department	COURSE /QP CODE	Teaching scheme					Examination scheme						
				Contact hours					Exam paper duration in Hrs	End exam		Maximum CIE Marks (IA+SA)	Minimum Marks for passing. (IA + SA)		
				TH	TU	PR	TOTAL	Credit		Max marks	Min marks				
	THEORY														
1	KANNADA KALI-1	KA	15KA3NT	2	-	-	2	2	-	-	-	50	20		
2	TANTRIKA KANNADA -1	KA	15KA3KT	2	-	-	2	2	-	-	-	50	20		

CIE- Continuous Internal Examination: SEE-Semester End Examination: IA-Internal Assessment Tests: SA- Student Activity.

- Note: 1. Candidates studied Kannada as one subject in 10th standard shall take Tantrika Kannada 1 & 2. Others may take "Kannada Kali-1&2".
2. In 3rd Semester- Assessment is only by CIE and no SEE. Average marks of three IA tests shall be rounded off to the next higher digit. Rubrics to be devised appropriately to assess student activity.

KARNATAKA STATE BOARD OF TECHNICAL EXAMINATION, BENGALURU.															
TEACHING AND EXAMINATION SCHEME FOR KANNADA COURSE IN DIPLOMA PROGRAMME															
SEMESTER: IV											COMMON TO ALL DIPLOMA PROGRAMMES			C-15 Curriculum	
SL.NO	COURSE NAME	Teaching Department	COURSE /QP CODE	Teaching scheme					Examination scheme						
				Contact hours					Exam paper duration in Hrs	Sem End Exam		Maximum CIE Marks (IA+SA)	Minimum Marks for passing. (IA + SA)		
				TH	TU	PR	TOTAL	Credit		Max Exam Marks	Min Passing Marks				
	THEORY														
1	KANNADA KALI-2	KA	15KA4NT	2	-	-	2	2	2	50	20	-	-		
2	TANTRIKA KANNADA -2	KA	15KA4KT	2	-	-	2	2	2	50	20	-	-		

CIE- Continuous Internal Examination: SEE-Semester End Examination: IA-Internal Assessment Tests: SA- Student Activity.

- Note: In 4th Semester- Assessment is only by SEE and no CIE. To award diploma certificate, passing in Kannada course is mandatory. However Kannada course is not included in the eligibility criteria for promotion to the higher semester.

ಡಿಪ್ಲೋಮಾ-ತಾಂತ್ರಿಕ ಕನ್ನಡ-1 (ಕನ್ನಡ ಬಲ್ಲವರಿಗಾಗಿ)
3ನೇ ಸೆಮಿಸ್ಟರ್ - ತಾಂತ್ರಿಕ ಕನ್ನಡ -1 (ಸಾಹಿತ್ಯ ಮತ್ತು ಭಾಷಾ ಕೌಶಲ್ಯ ಪ್ರಯೋಗ)
ಪಠ್ಯಕ್ರಮ

3rd Semester	Course: ತಾಂತ್ರಿಕ ಕನ್ನಡ -1	Course Code: 15KA3KT (2016-17)
	No. of Credits: 02	No. of teaching hours/week: 02 No. of teaching hours/Semester:26
	Mode of Assessment and Evaluation: Continuous Internal Evaluation (CIE) only. I.A Tests:30 Marks (3 Tests) Student activities: 20 Marks	Maximum Marks: 50 (CIE only) Minimum Passing marks:20 (IA Tests + Student activities)

ಪಠ್ಯ ಪ್ರಕಾರ	ಪಾಠ	ಪಠ್ಯದ ಹೆಸರು/ಲೇಖಕರು/ಪ್ರಕಟಣೆ	ಸೆಮಿಸ್ಟರ್ ಬೋಧನಾವಧಿ ಗಂಟೆಗಳು
ಇತಿಹಾಸ	1	'ಸಂಸ್ಕೃತಿ'- ದೇ.ಜೆ.ಗೌ (ನಾಟ್ಯ ಸಂಸ್ಕೃತಿ-ದೇ.ಜೆ.ಗೌ)	02
ಸಂಸ್ಕೃತಿ	2	ನಮಗೆ ಬೇಕಾಗಿರುವ ಇಂಗ್ಲಿಷ್- ಕುವೆಂಪು	02
ಪರಿಸರ	3	ಆನೆ ಹಳ್ಳದಲ್ಲಿ ಹುಡುಗಿಯರು - ಬಿ ಜಿ ಎಲ್ ಸ್ವಾಮಿ	02
ಕ್ರೀಡೆ/ಜೀವನಕಲೆ	4	ಸೋಲಂಬುದು ಅಲ್ಪವಿರಾಮ - ನೇಮಿಚಂದ್ರ	02
ಯಶೋಗಾಥೆ/ವ್ಯಕ್ತಿಚಿತ್ರಣ	5	ಬದುಕನ್ನು ಪ್ರೀತಿಸಿದೆ ಸಂತ - ಎಚ್.ಆರ್.ರಾಮಕೃಷ್ಣ (ಕಲಾಂರ ವ್ಯಕ್ತಿ ಚಿತ್ರ)	02
ತಂತ್ರಜ್ಞಾನ	6	ಮಂಗಳನ ಅಂಗಳದಲ್ಲಿ - ಜಿ.ಬಾಲಕೃಷ್ಣ	02
ಭಾಷಾ ಕೌಶಲ್ಯ ಚಟುವಟಿಕೆಗಳು	7	*ಮೌಖಿಕ ಅಭಿವ್ಯಕ್ತಿ: ಸಹಜ ಭಾಷಾ ಬಳಕೆ: .ಆಶು ಭಾಷಣ> ವಿವಿಧ ರಚನಾತ್ಮಕ/ದೈನಂದಿನ ಬಳಕೆ ವಸ್ತು, ವ್ಯಕ್ತಿ, ಭಾವನೆಗಳ ಮೇಲೆ. ಒಂದು ಸಣ್ಣ ಏಕಾಂಕ (5-10 ನಿಮಿಷ) ನಾಟಕ. ಮಾದರಿ ಸಂದರ್ಶನ (ನೇಮಕಾತಿಗಾಗಿ ಸಂದರ್ಶನ)	06
ಲಿಖಿತ ಚಟುವಟಿಕೆಗಳು	8	ವಿಸ್ತರಣೆ: ನುಡಿಗಟ್ಟುಗಳು-ಪದಗಳನ್ನು ಬಳಸಿಕೊಂಡು ಸಣ್ಣ ವಾಕ್ಯಗಳ ರಚನೆ ಪರ್ಯಾಯ ಪದಗಳನ್ನು ಬರೆಯುವುದು(ಉದಾ: ಬಳಸು=ಉಪಯೋಗಿಸು, ಕಾಯು= ನಿರೀಕ್ಷಿಸು, ಚಿಂತಿಸು=ಯೋಚಿಸು, ಕೂಡಿಸುವಿಕೆ=ಸೇರಿಸುವಿಕೆ.....ಇತ್ಯಾದಿ)	06
		ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ ಪರೀಕ್ಷೆಗಳು	02
		ಒಟ್ಟು ಗಂಟೆಗಳು	26

ತಾಂತ್ರಿಕ ಕನ್ನಡ-1

3ನೇ ಸೆಮಿಸ್ಟರ್ ಡಿಪ್ಲೋಮಾದ ಕನ್ನಡ ಪಠ್ಯ (ಕನ್ನಡ ಬಲ್ಲವರಿಗಾಗಿ)

1. ಪಠ್ಯರಚನಾ ಸಮಿತಿ
2. ನಿರ್ದೇಶಕರ ಮುನ್ನುಡಿ
3. ಪಠ್ಯ ರಚನಾ ಸಮಿತಿ ಮಾತುಗಳು
4. ಪಠ್ಯಕ್ರಮ

ಪರಿವಿಡಿ

ಗದ್ಯ ವಿಹಾರ

1. ನಾಟ್ಯ ಸಂಸ್ಕೃತಿ (ಇತಿಹಾಸ) - ದೆ.ಜೆ.ಗೌ
2. ನಮಗೆ ಬೇಕಾಗಿರುವ ಇಂಗ್ಲಿಷ್ (ಸಂಸ್ಕೃತಿ) - ಕುವೆಂಪು
3. ಸೋಲೆಂಬುದು ಅಲ್ಪವಿರಾಮ (ಕ್ರೀಡೆ/ಜೀವನಕಲೆ) - ನೇಮಿಚಂದ್ರ
4. ಆನೆ ಹಳ್ಳದಲ್ಲಿ ಹುಡುಗಿಯರು (ಪರಿಸರ) - ಬಿ.ಜಿ.ಎಲ್.ಸ್ವಾಮಿ
5. ಬದುಕನ್ನು ಪ್ರೀತಿಸಿದ ಸಂತ (ಯಶೋಗಾಥೆ/ವ್ಯಕ್ತಿಚಿತ್ರಣ) - ಎಚ್.ಆರ್.ರಾಮಕೃಷ್ಣ
6. ಮಂಗಳನ ಅಂಗಳದಲ್ಲಿ..... - ಡಾ:ಜೆ.ಬಾಲಕೃಷ್ಣ

ಭಾಷಾ ಕೌಶಲ್ಯ-ಚಟುವಟಿಕೆಗಳು

7. ಮೌಖಿಕ ಅಭಿವ್ಯಕ್ತಿ ಚಟುವಟಿಕೆಗಳು
8. ಲಿಖಿತ ಅಭಿವ್ಯಕ್ತಿ ಚಟುವಟಿಕೆಗಳು

Course outcome:

1. Developing listening and speaking skills.
2. Easy Interaction with peers.
3. Students can use the language at ease in daily life situations

ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯಮಾಪನ ವಿಧಾನ (3ನೇ ಸೆಮಿಸ್ಟರ್)

ನಿರಂತರ ಅಂತರಿಕ ಮೌಲ್ಯಮಾಪನ- Continuous Internal Evaluation (CIE) only.

ಕ್ರ.ಸಂ.	ಚಟುವಟಿಕೆಗಳು	ವಿವರ	ಗರಿಷ್ಠಾಂಕ	ಉತ್ತೀರ್ಣತೆಗೆ ಕನಿಷ್ಠಾಂಕ
01	ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ (IA Tests)	ಮೂರು ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ ಪರೀಕ್ಷೆಗಳು (ಸರಾಸರಿ ಅಂಕಗಳನ್ನು ಪರಿಗಣಿಸುವುದು)	30	
02	ಕನ್ನಡ ಭಾಷಾ ಕೌಶಲ್ಯಾಭಿವೃದ್ಧಿ ಚಟುವಟಿಕೆಗಳು (Student Activities)	ಮೂರು ಚಟುವಟಿಕೆಗಳು (ತಾಂತ್ರಿಕ ಪ್ರಬಂಧ/ಅಶುಭಾಷಣ/ಚರ್ಚೆ/ತಾಂತ್ರಿಕ ಕ್ಷೇತ್ರಗಳಲ್ಲಿನ ಅವಿಷ್ಕಾರಗಳ ಬಗ್ಗೆ ವಿಶ್ಲೇಷಣೆ ಇತ್ಯಾದಿ.) (ಸರಾಸರಿ ಅಂಕಗಳನ್ನು ಪರಿಗಣಿಸುವುದು)	20	
ಒಟ್ಟು ಅಂಕಗಳು			50	20

ಸೂಚನೆ:

ಭಾಷಾ ಚಟುವಟಿಕೆಗಳಿಗಾಗಿ ತರಗತಿ ಚಟುವಟಿಕೆಗಳ ಪುಸ್ತಕದಲ್ಲಿ (ತರಗತಿಯ ಪ್ರಗತಿಪರ ಮೌಲ್ಯಮಾಪನ). ಗಾದೆಗಳ ವಿಸ್ತರಣೆ, ನುಡಿಗಟ್ಟುಗಳು, ಸಂಭಾಷಣೆ ಮಾದರಿಗಳು ಮತ್ತು ಪಠ್ಯದ ಸಾಹಿತ್ಯ ಭಾಗದ ಪಾಠಗಳ ಮೇಲೆ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರ-ಟಿಪ್ಪಣಿ ಮತ್ತು ಶಬ್ದಾರ್ಥದಲ್ಲಿ ಬರುವ ಪದಗಳಿಂದ ವಾಕ್ಯ ರಚನೆ ಮಾಡಿಸುವುದು.

• ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ

3ನೇ ಸೆಮಿಸ್ಟರ್- ತಾಂತ್ರಿಕ ಕನ್ನಡ-1 (ಕನ್ನಡಬಲ್ಲ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ)

ಸಮಯ: 1.00 ಗಂಟೆ

ಅಂಕಗಳು:30

ಸೂಚನೆ: ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಿಗೆ ಸೂಚನೆಗಳ ಪ್ರಕಾರ ವ್ಯಾಕರಣದೋಷವಿಲ್ಲದಂತೆ ಉತ್ತರಿಸಿ.

1. ಈ ಕೆಳಗಿನ 04 ಪ್ರಶ್ನೆಗಳಿಗೆ ಒಂದು ಪೂರ್ಣ ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿ. 1*4=04
 - (ಅ) ನಾಟ್ಯ ಯಾವಾಗ ಹುಟ್ಟಿಕೊಂಡಿತು?
 - (ಆ) ಆನೆ ಹಳ್ಳದ ಕಾಡಿನಲ್ಲಿ ನಾಪತ್ತೆಯಾದ ಹುಡುಗಿಯರ ಹೆಸರುಗಳನ್ನು ತಿಳಿಸಿ.
 - (ಇ) ರಾಷ್ಟ್ರಪತಿಯಾಗಿ ಆಯ್ಕೆಯಾದಾಗ ಕಲಾಂ ಅವರು ಮೊದಲು ಹೇಳಿದ ಮಾತುಗಳೇನು?
 - (ಈ) ಮಂಗಳನ ಅಂಗಳ ತಲುಪಿದ ಮೊದಲ ಅಂತರಿಕ್ಷ ನೌಕೆ ಯಾವುದು?
 - (ಉ) 'ಹಗಲುಗನಸು' ನುಡಿಗಟ್ಟನ್ನು ಬಳಸಿ ಸ್ವಂತ ವಾಕ್ಯವನ್ನು ರಚಿಸಿ.
 - (ಊ) 'ಸಿಹಿಕಹಿ' ಜೋಡುಪದವನ್ನು ಒಂದು ವಾಕ್ಯದಲ್ಲಿ ಬಳಸಿ.
2. ಕೆಳಗಿನ ಯಾವುದೇ ನಾಲ್ಕು ಪ್ರಶ್ನೆಗಳಿಗೆ ಕನಿಷ್ಠ ಐದಾರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 4*4=16
 - (1) ಕುವೆಂಪು ಅವರು ಇಂಗ್ಲಿಷ್ ಕಲಿಯುವವರನ್ನು ಎಷ್ಟು ವಿಭಾಗವಾಗಿ ಹೇಗೆ ವಿಂಗಡಿಸಿದ್ದಾರೆ?
 - (2) ಕಲಾಂ ಅವರ ಯಶಸ್ಸಿನ ಮಂತ್ರಗಳೇನು?
 - (3) ಗಾದೆಗಳ ಮಹತ್ವವೇನು? ನಿಮಗೆ ಗೊತ್ತಿರುವ ಯಾವುದೇ ಎರಡು ಗಾದೆಗಳನ್ನು ಹೆಸರಿಸಿ.
 - (4) ಸಂವಹನ ಸಂದರ್ಭದಲ್ಲಿ ಬಳಸುವ ಭಾಷೆ ಹೇಗಿರಬೇಕು?
 - (5) ನೇಮಿಚಂದ್ರರ 'ಸಾವಿನತ್ತ ಒಂದು ಹೆಜ್ಜೆ' ಕತೆ ಓದಿದ ಹುಡುಗಿ ತನ್ನ ಸೋಲಿನಿಂದ ಹೊರಗೆ ಬಂದದ್ದು ಹೇಗೆ?
 - (6) ಸಂದರ್ಶನ ಎಂದರೇನು? ವಿವರಿಸಿ.
3. ಯಾವುದೇ ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. 2*5=10
 - (1) ನಾಟ್ಯಕಲೆಯಲ್ಲಿ ಯಕ್ಷಗಾನ ಕಲೆ ಪ್ರಮುಖವಾದುದು. ಇದರ ಹುಟ್ಟು ಮತ್ತು ವ್ಯಾಪ್ತಿ ಬಗ್ಗೆ ತಿಳಿಸಿ.
 - (2) ಮಂಗಳಯಾನದ ಮುಖ್ಯ ಉದ್ದೇಶಗಳೇನು?
 - (3) 'ಮಾನವೀಯ ಮೌಲ್ಯಗಳು', ಅಂತರಜಾಲ - ಎರಡರಲ್ಲಿ ಒಂದಕ್ಕೆ ಸುಮಾರು ಒಂದು ಪುಟದಷ್ಟು ಪ್ರಬಂಧ ಬರೆಯಿರಿ.
 - (4) ಉದ್ಯೋಗದ ಸಂದರ್ಶನಕ್ಕೆ ಹೋಗುವಾಗ ಮಾಡಿಕೊಳ್ಳಬೇಕಾದ ಪೂರ್ವಸಿದ್ಧತೆಗಳೇನು?.

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ ರಚನಾ ಹಾಗೂ ಪಠ್ಯಪುಸ್ತಕ ಸಮಿತಿ


• ಸಂಪಾದಕೀಯ ಸಮಿತಿ:

1. ಶ್ರೀ ಟಿ ಎಲ್ ರವೀಂದ್ರ, ಉಪನ್ಯಾಸಕರು, ಸರ್ಕಾರಿ ಜಿ.ಆರ್.ಐ.ಸಿ.ಪಿ ಬೆಂಗಳೂರು.
2. ಶ್ರೀ ಟಿ. ತಿಮ್ಮಪ್ಪ, ಉಪನ್ಯಾಸಕರು(ಆಯ್ಕೆ ಶ್ರೇಣಿ), ಯಾಂತ್ರಿಕ ವಿಭಾಗ, ಸರ್ಕಾರಿ ಪಾಲಿಟೆಕ್ನಿಕ್, ತುಮಕೂರು.

• ಸಲಹಾ ಸಮಿತಿಯ ಬಾಹ್ಯ ಸಂಪನ್ಮೂಲ ವ್ಯಕ್ತಿಗಳು.

1. ಪ್ರೊ. (ಡಾ.) ಡಿ. ಪಾಂಡುರಂಗ ಬಾಬು, ಕುಲಸಚಿವರು, ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.
2. ಪ್ರೊ. (ಡಾ.) ಅಶೋಕ್ ಕುಮಾರ್ ರಂಜರೆ, ಪ್ರಾಧ್ಯಾಪಕರು, ಪ್ರಸಾರಾಂಗ ವಿಭಾಗ, ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.
3. ಪ್ರೊ. (ಡಾ.) ಕೆ ವೈ ನಾರಾಯಣ ಸ್ವಾಮಿ, ಸಹ ಪ್ರಾಧ್ಯಾಪಕರು, ಸ್ನಾತಕೋತ್ತರ ವಿಭಾಗ, ಸರ್ಕಾರಿ ಕಲಾ ಕಾಲೇಜು, ಬೆಂಗಳೂರು.
4. ಪ್ರೊ. (ಡಾ.) ಜೆ ಬಾಲಕೃಷ್ಣ, ಪ್ರಾಧ್ಯಾಪಕರು ಹಾಗೂ ಮುಖ್ಯಸ್ಥರು, ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ವಿಭಾಗ, ಕೃಷಿ ವಿಶ್ವವಿದ್ಯಾಲಯ, (ಜಿಕೆವಿಕೆ) ಹೆಬ್ಬಾಳ, ಬೆಂಗಳೂರು.

Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: Data Structures using C		
	Scheme (L:T:P) : 4:0:0	Total Contact Hours: 52	Course Code: 15CS41T
	Type of Course: Lectures, Self Study & Student Activity.	Credit : 04	Core/ Elective: Core
CIE- 25 Marks		SEE- 100 Marks	

Prerequisites:

Knowledge of C programming.

Course Objectives

To study the concepts of derived data types and data structures such as linked list, stack, queue, sorting and searching techniques.

Course Outcome

On successful completion of the course, the students will be able to attain below Course Outcome (CO):

Course outcome		CL	Linked PO	Teaching Hours
CO1	Illustrate the concepts of pointers and dynamic memory allocation with programs.	U,A	1 to 4 and 7 to 10	08
CO2	Discuss different types of file operations and command line arguments to develop simple program. of lists and apply various operations on them.	U,A	1 to 4 and 7 to 10	06
CO3	Describe data structures and different types of linked list	U,A	1 to 4 and 7 to 10	10
CO4	Construct stacks and queues using the concept of Arrays and Linked lists.	U,A	1 to 4 and 7 to 10	10
CO5	Illustrate the use of Binary Trees and its operations.	U,A	1 to 4 and 7 to 10	08
CO6	Explain sorting and searching techniques with associated programs.	U,A	1 to 4 and 7 to 10	10
			Total sessions	52

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10

Data Structures using C	3	3	3	3	-	-	3	3	3	3
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Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

Course Content and Blue Print of Marks for SEE

Unit No	Unit Name	Hour	Questions to be set for SEE			Marks Weightage	Marks Weightage (%)
			R	U	A		
I	Pointers and Dynamic Memory allocation	08	-	07	15	22	15.39
II	Files	06	-	07	10	17	11.53
III	Introduction to data structures & Linked lists	10	05	07	16	28	19.23
IV	Stack & Queues	10	-	08	20	28	19.23
V	Trees	08	-	07	15	22	15.39
VI	Sorting, Searching and Application of Data Structures	10	-	08	20	28	19.23
Total		52	05	44	96	145	100

UNIT I : Pointers and Dynamic Memory allocation

08 Hrs

Pointers - Concept of pointers, Declaring and initializing pointers, Accessing variables using pointers, Pointer arithmetic, Pointers and arrays, Pointers and character strings, Pointers and functions, Pointer as a function argument, Pointers to function, Pointers and structures.

Dynamic Memory allocation – Introduction, Dynamic memory allocation, Allocating a block of memory: Malloc, Allocating multiple blocks of memory: Calloc, Releasing the used space: Free Altering the size of memory: Realloc

UNIT II: Files

06 Hrs

Introduction, Defining and opening a file, closing a file, Input / Output operations on files, Error handling during I/O operations, Random Access to files, Command line arguments

UNIT III: Introduction to data structures & Linked lists

10 Hrs

Introduction to data structures – Introduction, Characteristics, Types of data structures, data structure operations.

Linked lists – Introduction, Basic concept, linked list implementation, Types of linked lists, Circular linked list (no implementation), doubly linked list (no implementation).

UNIT IV: Stack & Queues

10 Hrs

Stack – Introduction, Stacks, Stack operations, stack implementations.

Queues – Introduction, Basic concept, queue operations, queue implementations, circular queue (no implementation), priority queues (no implementation), double ended queues (no implementation).

UNIT V: Tree

08 Hrs

Introduction, Basic concept, Binary tree, Binary tree representation, Binary tree traversal.

UNIT VI: Sorting, Searching and Application of Data Structures

08 Hrs

Sorting – Introduction, sorting techniques – selection sort, insertion sort, bubble sort, quick sort (no implementation), merge sort (no implementation).

Searching – Introduction, Linear search, binary search.

Application of data structure – Introduction, Applications of stack, Infix to postfix conversion, Evaluation of a postfix expression, Recursion, factorial, GCD, List application of queues, linked lists and trees.

Text books

1. Programming with ANSI-C, E. Balaguruswamy, Sixth Edition, Tata Mcgraw Hill *for Unit I and II*
2. Data Structures using C, E. Balagurusamy, Tata Mcgraw Hill *for Unit III,IV,V,VI*

References

1. Programming with ANSI & Turbo C, Ashok Kamthane, Second Edition, Pearson Education.
2. Let us C, Yashavant P Kanetkar, 14th Edition, BPB publication, ISBN 9788183331630
3. Data structures A Programming Approach with C Second Edition , PHI publication, Dharmender Singh Kushwaha, Arun Kumar Misra.
4. Programming in C and Data Structure, P.B.Kotur, Sapna Book house
5. http://spoken-tutorial.org/tutorial-search/?search_foss=C+and+C++&search_language=English
6. <http://www.tutorialspoint.com/cprogramming/>
7. <http://www.indiabix.com/online-test/c-programming-test/>

Suggested list of student activities

Note: the following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course coordinator and programme coordinator.
2. Each group should conduct different activity and no repeating should occur

1	Implementation of Double linked list and circular linked list
2	Implementation of Circular Queue
3	Implementation of function pointers
4	Design and implement the Applications of Stack
5	Quiz

Course Delivery

The course will be delivered through lectures and Power point presentations/ Video

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE	IA	Students	Three IA tests (Average of three tests will be computed)	20	Blue books	1 to 6
				Student activities	05	Report	1 to 6
				Total	25		
	SEE	End Exam		End of the course	100	Answer scripts at BTE	1 to 6
Indirect Assessment			Students	Middle of the course		Feedback forms	1, 2, 3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1 to 6 Effectiveness of Delivery of instructions & Assessment Methods

Note: I.A. test shall be conducted for 20 marks. Average marks of three tests shall be rounded off to the next higher digit.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	50
3	Application	40

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue books (20 marks)
2. Student suggested activities report for 5 marks
3. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

FORMAT OF I A TEST QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks		
Ex: I test/6 th weak of sem 10-11 Am	I/II SEM		20		
	Year:				
Name of Course coordinator : CO's: _____			Units: __		
Question no	Question	MARKS	CL	CO	PO
1					
2					
3					
4					

Note: Internal choice may be given in each CO at the same cognitive level (CL).

MODEL QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks		
Ex: I test/6 th week of sem 10-11 AM	IV SEM	Data Structures Using C	20		
	Year: 2015-16	Course code:15CS41T			
Name of Course coordinator : Units:1,2 Co: 1,2			Note: Answer all questions		
Question no	Question	CL	C O	PO	
1	How is a pointer to an array different from an array of pointers? Explain with an example (5)	U	1	1,2	
2	Write C program to swap two numbers using pointers. (5) OR Give the difference between call-by-value and call-by-reference methods.	A	1	1,2	
3	Explain different file accessing modes. OR With an example, explain how to handle errors during I/O operations	U	2	1,2	
4	Write a program to copy contents of one file to another.	A	2	1,2	

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Diploma in Computer science & Engineering**IV- Semester****Course Title: Data Structures Using C****Time: 3 Hours****Max Marks: 100****PART-A****Answer any SIX questions. Each carries 5 marks.****5X6=30 Marks**

1. Explain fseek() and ftell() functions.
2. Define Data structures. Mention different types of data structures.
3. Write the advantages and disadvantages of a Linked List.
4. Define stack. Explain how to represent a stack in C.
5. Write a note on dequeue.
6. Define the following a) internal node b) sibling c) degree of the tree d) depth of a tree e) path
7. Define the following a) root node b) leaf node c) level of tree d) child node e) parent node.
8. Write a recursive C program to find the GCD of two numbers.
9. List the application of Linked List.

PART-B**Answer any SEVEN full questions each carries 10 marks.****10X7=70 Marks**

1. a) Define Pointer. Write its advantages and disadvantages.
b) Explain pointer to structure with example.
2. List and explain Dynamic Memory allocation functions in C.
3. Write a program to copy contents of one file to another. Use command line arguments to specify the file names.
4. Write the c functions to perform insert at front and delete operations on Singly Linked List.
5. Define Circular Linked List. Give its c representation.
6. Write C program to implement push and pop operation of stack.
7. Define Priority queue. Write the C implementation Priority Queue.
8. Construct a binary tree for the following values and traverse the tree in preorder, inorder and postorder:
46, 76, 36, 26, 16, 56, 96
9. Write a c program to implement Binary Search.
10. List the application of stack. Write an algorithm to convert infix to postfix expression.



MODEL QUESTION BANK**Diploma in Computer Science & Engineering****IV Semester****Course Title: Data Structures Using C**


CO	Question	CL	Marks
I	Define Pointer. Write its advantages and disadvantages.	A	05
	Explain the declaration and initialization of pointer variable with an example.	U	
	Discuss the use of address operator and indirection operator with pointers.	U	
	Explain the array of pointers with an example.	U	
	Give the difference between call-by-value and call-by-reference methods.	U	
	Differentiate between pointers as function arguments and pointers to function.	A	
	How is a pointer to an array different from an array of pointers? Explain with an example	U	
	Explain pointers and array using example.	U	
	Explain how an array can be passed to a function?	A	
	Explain in brief the different parameter passing mechanisms.	A	
	Explain pointer to structure with example.	A	
	Write C program to swap two numbers using pointers.	A	
	Define Dynamic Programming in C and its advantages.	A	
	Give the difference between malloc() and calloc() functions.	U	
	Explain free(). What are its advantages?	U	
	Explain character pointer as an argument to a function with an example.	U	10
	Discuss pointer as a function argument. With an example explain call-by-reference method.	A	
	With an illustration program explain pointers to structures.	A	
	With an illustration program explain pointers to arrays.	A	
	Write a program to illustrate pointer arithmetic's.	A	
	Write C program to compare 2 strings to check whether they are equal or not using pointer.	A	
	What are the advantages of pointer? Write a program using pointers to compute the sum of all elements stored in an array.	A	
	Explain Dynamic Memory allocation in C using memory map.	A	
List and explain Dynamic Memory allocation functions in C.	A		
Writ a program to illustrate memory allocation using malloc() function.	A		
Writ a program to illustrate memory allocation using calloc() function.	A		
Writ a program to illustrate reallocation of memory using realloc() function.	A		
How are static and dynamic memory allocations different? Write a program to sort 10 numbers using malloc().	A		
What is a file? Explain how to open and close a file.	U		
Distinguish between the following functions: i. getc and getchar	R		

II	ii. printf and fprintf		05	
	With an example, explain how to handle errors during I/O operations.	U		
	Explain fseek() and ftell() functions.	U	10	
	Differentiate between following functions: i. feof and ferror ii. printf and fprintf iii. getc and getw	U		
	Write a program to copy contents of one file to another.	A		
	Use command line arguments to specify the file names.	U		
	List and explain Input /Output functions of file.	U		
	Explain different file accessing modes.	U		
III	Define Data structures. Mention different types of data structures.	R	05	
	What are primitive data types? Explain	U		
	Distinguish between linear and non-linear data structures.	R		
	Explain data structure operations.	U		
	Define Linked List. Mention the different types of Linked list.	R		
	Explain the representation of a Linked List in memory with a help of an illustration.	U		
	Explain the operations that are performed on Singly Linked List.	U		
	Write the advantages and disadvantages of a Linked List.	U		
	Compare Singly Linked List with Circular Linked List.	U		
	Compare Singly Linked List with Doubly Linked List.	U		
	Write the c functions to perform insert at end and display operations on Singly Linked List.	A		10
	Write the c functions to perform insert at front and delete operations on Singly Linked List.	A		
Write the c functions to perform insert at a given position operations on Singly Linked List.	A			
Define Circular Linked List. Give its C representation.	A			
Define Doubly Linked List. Give its C representation.	A			
IV	Define stack. Explain how to represent a stack in C.	U	05	
	Explain push and pop operations of stack.	A		
	Define queue. Explain the sequential representation of queue	U		
	Write a note on queue.	U		
	Define Priority queue. Differentiate ascending ord descending priori queue	A		
	Write C program to implement push and pop operation of stack.	A	10	
	Define queue. List and explain types of queues.	U		
	Write a program to implement queue in C.	A		
	Write an algorithm to perform Queue insertion and deletion.	A		
	Define Circular queue. Write the C implementation Circular Queue.	A		
	Define Priority queue. Write the C implementation Priority Queue.	A		
Define Double Ended queue. Write the C implementation Double Ended Queue double.	A			
Define Binary tree. Explain the method of representing binary trees.	U			

V	Explain with an example how to perform deletion operation on a binary tree.	A	05
	Define the following a) root node b) leaf node c) level of tree d) child node e)parent node.	R	
	Define the following a)internal node b) sibling c) degree of the tree d) depth of a tree e)path	R	
	Construct a binary tree for the following data, 16, 3, 8, 11, 1, 6, 9, 14, 2, 10, 17, 7 13	A	
	Explain Strictly Binary tree and Complete Binary Tree, with an example.	A	
	Explain Perfect Binary tree and Balanced Binary Tree, with an example.	A	
	What is binary tree traversing? Explain type of traversal with example.	A	
	Develop a recursive algorithm to traverse a binary tree in the following order i.e Inorder, Preorder and Post order.	A	10
	Construct a binary tree for the following values and traverse the tree in preorder, inorder and postorder: 46, 76, 36, 26, 16, 56, 96	A	
	Define tree traversal. List and explain types of tree traversal.	A	
VI	Explain with an example the working of the merge sort.	A	05
	Explain the concept of straight selection sort.	U	
	Write a note on simple insertion sort.	U	
	Explain Quick sort with example.	A	
	Explain Bubble sort with an example.	A	
	Explain the concept of Linear Search.	U	
	Explain the concept of Binary Search.	U	
	Write a recursive C program to find the GCD of two numbers.	A	
	Write a recursive C program to find the Factorial of a number.	A	
	What is recursion? Explain the properties of recursive definition	U	
	List the application of Queues.	A	
	List the application of Linked List.	A	
	List the application of Trees.	A	
	Develop a C program to implement bubble sort method.	A	10
	Write a program to implement Insertion sort.	A	
	Write a program to implement Selection sort.	A	
	Write a c program to implement Linear Search.	A	
	Write a c program to implement Binary Search.	A	
List the application of stack. Write an algorithm to convert infix to postfix expression.	A		
Give the postfix and prefix forms for the following expression. $(a / b) * c - (d + g) \$ f$	U		
Give the postfix and prefix forms for the following expression. $a \$ b * c - d + e / f / (g + h)$	U		
Evaluate the given postfix expression with the stack content, $3+4*2/(9-5) ^ 4$	U		



Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: OOP With Java		
	Scheme (L:T:P) : 4:0:0	Total Contact Hours: 52	Course Code: 15CS42T
	Type of Course: Lectures, Self Study & Student Activity.	Credit : 04	Core/ Elective: Core
CIE- 25 Marks		SEE- 100 Marks	

Prerequisites

Knowledge of programming concepts.

Course Objectives

To learn and implement object-oriented features such as encapsulation, inheritance and polymorphism along with error-handling techniques using Java.

Course Outcome

On successful completion of the course, the students will be able to attain below Course Outcome (CO):

Course outcome		CL	Linked PO	Teaching Hours
CO1	Discuss the OOP's concept and Apply the concepts to design, implement, compile, test and execute simple Java programs.	U, A	2,3,4,8,10	8
CO2	Explain the concepts related to classes and Use built-in methods of String and String Buffer classes.	U, A	2,3,4,8,10	14
CO3	Define Inheritance and Discover Interface with programs	U, A	2,3,4,8,10	6
CO4	Illustrate Packages and articulate with simple programs	U, A	2,3,4,8,10	8
CO5	Illustrate multithreading concepts by experimenting with programs	U, A	2,3,4,8,10	8
CO6	Interpret different types of Exceptions by solving programs.	U, A	2,3,4,8,10	8
			Total sessions	52

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
OOP With Java	-	3	3	3	-	-	-	3	-	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

Course Content and Blue Print of Marks for SEE

Unit No	Unit Name	Hour	Questions to be set for SEE			Marks Weightage	Marks Weightage (%)
			R	U	A		
I	Introduction of Java	8	5	10	7	22	15.38
II	Classes, Objects and Methods; Strings and String Buffer Classes	14	-	18	10	38	27.00
III	Interface: Multiple Inheritance	6	-	6	10	16	11.53
IV	Packages: Putting Classes Together	8	-	13	10	23	15.38
V	Multithreaded Programming	8	-	13	10	23	15.38
VI	Managing Errors and Exceptions	8	-	13	10	23	15.38
Total		52	5	73	57	145	100

UNIT I: Introduction of Java

06 Hrs

Fundamentals of Object Oriented Programming- Introduction, Object oriented Paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP.

Java Evolution - Java history, Java Features, How Java Differs from C and C++, Java and World Wide Web, Java Environment, Simple Java Program, An Application with Two Classes, Java Program Structure, Java Tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command Line Arguments, Programming Style, Constants, Variables, Data Types, Scope of Variables, Symbolic Constants, Type Casting, Standard Default Values, Special Operators, Mathematical Functions, Labelled Loops (break & Continue) Operators and Expressions, Decision Making, Branching & Looping.

UNIT II: Classes, Objects and Methods; Strings and String Buffer Classes 14Hrs

Classes, Objects and Methods - Introduction, Defining a Class, Fields Declaration, Methods Declaration, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods, Inheritance: Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Finalize Methods, Abstract Methods and Classes, Methods with Variable arguments (Varargs), Visibility Control.

Strings and String Buffer Classes - Strings, Vectors, Wrapper classes, Enumerated Types, Annotations.

UNIT III: Interface: Multiple Inheritance 10Hrs

Introduction, Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interface Variables.

UNIT IV: Packages: Putting Classes Together 08Hrs

Introduction, Java API Packages, Using System Packages, Naming Conventions, Creating Packages, Accessing a Package, Using a Package, Adding a Class to a Package, Hiding Classes, Static Import.

UNIT V: Multithreaded Programming 06 Hrs

Introduction, Creating Threads, Extending the Thread Class, Stopping and Blocking a Thread, Life Cycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface, Inter-thread Communication.

UNIT VI: Managing Errors and Exceptions 08 Hrs

Introduction, Types of Errors, Exceptions, Syntax of Exception Handling Code, Multiple Catch Statements, Using Finally Statement, Throwing Our Own Exceptions.

 Text books

Programming with Java, 6th edition, Balagurusamy, Mc Graw Hill, ISBN 13- 9789351343202
ISB 10- 9351343200

References

1. Complete Reference Java J2se, Herbert Schildt, Tata McGraw Hill, ISBN 9780070598782
2. Java 6 Programming – Black Book Wiley India Pvt ltd
3. Programming in JAVA2 – Dr. K. Somasundaram Jaico Publish
4. Programming in JAVA – S.S. Khandare – S. Chand Publish

E-learning resources

<http://www.Javatpoint.com/Java-tutorial>
<http://www.tutorialspoint.com/Java/>
<http://www.indiabix.com/technical/core-Java/>

Suggested list of student activities

Note: The following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned Course coordinator and Program Coordinator

2. Each group should conduct different activity and no repeating should occur.

- Hotel Management System, E-Bill Board, Online insurance, Online Mobile, Contributor, Online Restaurant, Public Distribution System, SECURE E-banking security,

District medical data center, Visit different sites relevant to topics. Listen to the lectures and submit a handwritten report, etc.

Course Delivery

The course will be delivered through lectures and Power point presentations/ Video

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE	IA	Students	Three IA tests (Average of three tests will be computed)	20	Blue books	1 to 6
				Student activities	05	Activity Reports	1 to 6
				Total	25		
	SEE	End Exam		End of the course	100	Answer scripts at BTE	1 to 6
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1 to 3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1 to 6 Effectiveness of Delivery of instructions & Assessment Methods

Note: I.A. test shall be conducted for 20 marks. Average marks of three tests shall be rounded off

to the next higher digit.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	30
3	Application	60

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue books (20 marks)
2. Student suggested activities report for 5 marks
3. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

FORMAT OF I A TEST QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th week of sem 10-11 Am	I/II SEM		20			
	Year:					
Name of Course coordinator :			Units: __			
CO's: ____						
Question no	Question		MARKS	CL	CO	PO
1						
2						
3						
4						

Note: Internal choice may be given in each CO at the same cognitive level (CL).

MODEL QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th week of sem 10-11 AM	IV SEM	OOP With Java	20			
	Year: 2015-16	Course code:15CS42T				
Name of Course coordinator :			Units:1,2 Co: 1,2			
Note: Answer all questions						
Question no	Question		CL	CO	PO	
1	Define the following OOPS concepts a. Inheritance b. Polymorphism		(5)	U	1	1,2
2	Illustrate Java communication with a web page		(5)	A	1	1,2
3	Explain any five string buffer methods		(5)	U	2	1,2
4	Write a Java Programme to illustrate to illustrate vectors.		(5)		2	1,2

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
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Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

**Diploma in Computer science & Engineering
IV- Semester****Course Title: OOP With Java Programming**Time: **3 Hours**Max Marks: **100****PART-A****Answer any SIX questions. Each carries 5 marks.****5X6=30 Marks**

1. List any five major differences between C++ and Java.
2. Distinguish between Inheritance & Polymorphism.
3. Define constructors. List its special properties.
4. Compare arrays and vectors.
5. Explain how to add a class to a package with an example.
6. Explain the various forms of interface implementation.
7. Explain yield(), sleep() and stop() methods of a thread.
8. List the Java exceptions.
9. Illustrate with an example nested try statement.

PART-B**Answer any SEVEN full questions each carries 10 marks.****10X7=70 Marks**

1. Explain the features of Java.
2. Explain class definition with fields and method declaration.
3. Define static member. Write a program to illustrate static members.
4. Define inheritance. Explain different forms of inheritance.
5. Write a program to implement interfaces
6. Explain Java API packages
7. Write a Package program to demonstrate basic arithmetic operators
8. Explain the life cycle of thread.
9. Explain with an example thread creation by implementing runnable Interface..
10. Write a program for throwing your own exception.



MODEL QUESTION BANK

Diploma in Computer Science & Engineering

IV Semester

Course Title: OOP with Java

CO	Question	CL	Marks
I	Give the definition of object oriented programming and how it is different from procedure-oriented programming	U	05
	Explain the organization of data and methods in an object oriented programming.	U	
	List the unique advantages of an object oriented programming	U	
	Give the definition of object and classes. Explain representation of an object with an example.	U	
	Define the following (i) Data abstraction (ii) Data encapsulation	U	
	Define the following OOPS concepts b. Inheritance c. Polymorphism	U	
	Distinguish between objects and classes	U	
	Distinguish between Data abstraction & Data encapsulation	U	
	Distinguish between Inheritance & Polymorphism	U	
	Distinguish between Dynamic binding & message passing.	U	
	Explain Dynamic binding & message passing	U	
	List any five advantages of OOP	A	
	List any five areas of application of OOPS technology	A	
	Java is platform independent language. Justify	U	
	Discuss how Java is more secured than other language	U	
	List any features of Java.	A	
	List any five major differences between C and Java.	U	
	List any five major differences between C++ and Java	U	
	Discuss the contributions of Java to the world wide web.	A	
	Illustrate Java communication with a web page	A	
Explain the process of building and running Java application programs	A		
Explain Java run time environment	U		
Write a simple Java program and explain	A		
Write a simple Java program to illustrate the use of mathematical functions	A		
List the different sections of Java program structure	U		
I	List the advantages of OOPS.	U	
	Discuss OOPS areas of application.	A	
	Define the following. a. Data abstraction. b. Data encapsulation. c. Inheritance.	R	
	Define the following.	R	


	a. Polymorphism. b. Dynamic binding. c. Message Communication.		10
	List and explain Java features.	A	
	Discuss how Java differs from C & C++.	U	
	Explain the contributions of Java to the world wide web. With a figure illustrate how Java communicates with a web page.	U	
	Write a Java program to illustrate an application with two classes	A	
	Explain Java program structure with a diagram	U	
	Explain the features of Java.	A	
	List and explain Java statements.	U	
	Describe in detail the steps involved in implementing a standalone program	U	
	Explain Java virtual machine.	U	
	Discuss command line arguments in Java with an example program	U	
	With general syntax explain formatted input-output statements. Give example for each.	U	
II	Define constructors. List its special properties	U	05
	Define object. Explain object creation from a class	U	
	Define multilevel inheritance with an example	U	
	Define hierarchical inheritance with an example	U	
	Describe the syntax of single inheritance in Java	U	
	Compare and contrast overloading and overriding methods	U	
	Define subclass constructor and the use of keyword super	U	
	Define final classes and finalize methods	U	
	Define abstract methods and classes	U	
	Write the visibility control of Java classes.	U	
	Compare arrays and vectors	U	
	Explain any five string methods.	U	
	Explain any five string buffer methods	U	
	Explain the use of wrapper class in Java	U	
	Differentiate between interfaces and classes	U	
	III	Explain class definition with fields and methods declaration	
Discuss object creation in Java.		U	
With an example explain accessing of class members		A	
Write a program to illustrate constructor		A	
Discuss the process of method overloading		U	
Define static member. Write a program to illustrate static members.		A	
Write a program to illustrate method overloading		A	
Write a program to sort N elements of an array.		A	
Write a program to illustrate vectors.		A	
Write a program to illustrate wrapper classes		A	
III	Differentiate between interfaces and classes	U	05
	Write the general syntax of creating an interface and explain	U	
	Explain the various forms of interface implementation	U	
	Explain how to access interface variables with an example		
	Write the similarities between class and interfaces	U	

	Explain how to extend interfaces with an example	A	10
	With an example explain how to support multiple inheritance	A	
	Write a program to implement interfaces.	A	
IV	Define a package. List Java API packages	U	05
	How to create and implement a package	U	
	Explain the naming convention of a package with an example	U	
	Explain how to access packages with an example	A	
	Explain how to add a class to a package with an example	A	
	Discuss the various levels of access protection available for packages	U	
	Explain how to hide classes in a package	U	
	Explain static import and how is it useful	U	10
	Explain Java API packages.	U	
	Write a program to add a class to a package.	A	
	Write a Package program to demonstrate basic arithmetic operators	A	
	Write a program to use inbuilt packages to calculate square root of a number	A	
V	Define thread.	R	05
	Differentiate between multithreading and multitasking	U	
	Explain how to create thread by extending Thread class with an example	U	
	Explain how to stop and block a thread	U	
	Describe complete life cycle of a thread	U	
	Explain yield(),sleep() and stop() methods of a thread	U	
	Write a note on thread exceptions	U	
	How do we set priorities for threads?	U	
	How to create a runnable thread?	U	
	Define synchronization? When do we use it	U	
	Differentiate between suspending and stopping a thread	U	10
	Explain the different methods of creating threads	U	
	Write a program to create a threads using a thread class	A	
	Explain thread creation by implementing runnable interface with an example	A	
	Write a note on inter- thread communication	U	
	Write a program to create threads by extending thread class	A	
	Write a program to create threads by implementing runnable interface	A	
Write a program to set priorities for threads	A		
Write a program to implement yield(),sleep() and stop() methods of a thread	A		
Explain the life cycle of thread.	U		
VI	Define exception and explain its purpose	U	05
	Explain types of errors with suitable examples	U	
	List the compile time errors	U	
	List the run time errors	U	
	Illustrate compile time errors with an example	A	
	Illustrate run time errors with an example	A	
	Explain the syntax of exception handling	U	
	Write a program to illustrate nested try statements	A	

Explain nested try statements with an example	A	
Explain multiple catch blocks with an example	A	
How many catch blocks can be used with one try block.,explain	U	
Create a try block that is likely to generate three types of exception and then incorporate necessary catch block to catch and handle them appropriately	A	
Explain the finally block. When and how it is used with a suitable example	U	
Explain how exception handling mechanism can be used for debugging a program	A	
Define an exception called “No MatchException”that is thrown when a string is not equal to “ India”.Write a program that uses this exception	A	
Explain how to throw our own exceptions	U	
Write a program to implement “ Throwing our own exceptions”	A	
Write a program to illustrate multiple catch blocks	A	
Write a program to use multiple catch block statement.	A	
Write a program to illustrate nested try statement.	A	
Write a program for throwing your own exception	A	



Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: Operating System		
	Scheme (L:T:P) : 4:0:0	Total Contact Hours: 52	Course Code: 15CS43T
	Type of Course: Lectures, Self Study & Student Activity.	Credit : 04	Core/ Elective: Core
CIE- 25 Marks		SEE- 100 Marks	

Prerequisites

Basic Computer Concepts

Course Objectives

1. Understand the services of an operating system provides to its users and system itself.
2. Apply various CPU scheduling algorithms and recognize the classic synchronization problems.
3. Compare methods for handling deadlocks and apply various memory management techniques.
4. Describe file systems.

Course Outcome

On successful completion of the course, the students will be able to attain below Course Outcome (CO):

Course outcome		CL	Linked PO	Teaching Hours
CO1	Describe operating system operations and operating system structures.	<i>U</i>	1,2,9,10	08
CO2	Understand process management and apply process scheduling algorithms	<i>U, A</i>	2,3,9,10	12
CO3	Recognize Synchronization and discover the methods for handling deadlocks.	<i>U, A</i>	2,3,9,10	08
CO4	Explain the memory management techniques.	<i>U, A</i>	2,3,9,10	08
CO5	Discover the concepts related to virtual memory management	<i>U, A</i>	2,3,9,10	08
CO6	Identify file systems concepts.	<i>U, A</i>	2,3,9,10	08
		Total sessions		52

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
Operating System	-	3	3	-	-	-	-	-	3	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

Course Content and Blue Print of Marks for SEE

Unit No	Unit Name	Hour	Questions to be set for SEE			Marks Weightage	Marks Weightage (%)
			R	U	A		
I	Introduction to operating systems	8	-	22	-	22	15.38
II	Process management	12	-	22	10	32	23.10
III	Synchronization & Deadlocks	08	-	12	10	22	15.38
IV	Memory management	08	-	14	10	24	15.38
V	Virtual memory management	08	-	13	10	23	15.38
VI	File system	08	-	12	10	22	15.38
Total		52	-	95	50	145	100

UNIT I : Introduction to Operating System

08 Hrs

What operating systems do? Computer System architecture, Operating System structure, Operating System operations, Process management, Memory management, Storage management, Protection and security, Distributed system, Special-purpose systems, Computing environments, Open-source Operating Systems..

UNIT II: Process Management

12 Hrs

Process concept, Process scheduling, Operations on processes, Inter-process communication, Process Scheduling: Basic concepts, Scheduling criteria, Scheduling algorithms.

UNIT III: Synchronization & Deadlocks

08 Hrs

Synchronization – Background, The critical section management and semaphores (Concepts only)

Deadlocks- System model, Deadlock characterization, Methods for handling deadlocks, Deadlock prevention, Deadlock avoidance, Deadlock detection, Recovery from deadlock

UNIT IV: Memory Management Strategies**08 Hrs**

Background, Swapping, Contiguous memory allocation, Paging, Structure of page table, Segmentation

UNIT V: Virtual Memory Management**08 Hrs**

Background, Demand paging, Copy-on-write, Page replacement, Allocation of frames .

UNIT VI: File System**08 Hrs**

File concept, Access methods, Directory and disk structure, File system mounting, File Sharing , Protection.

Text books

1. **Operating System Principles** – Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, 8th edition, Wiley-India. (Chapters-1, 3, 5, 6, 7, 8, 9, 10 and 11)
ISBN- 9788126520510

References

1. Operating Systems, I. Chandra Mohan, PHI, 2013, ISBN – 9788120347267
2. http://www.tutorialspoint.com/operating_system/
3. <http://courses.cs.vt.edu/~csonline/OS/Lessons/index.html>
4. <http://www.nptel.ac.in>

Suggested list of student activities

Note: the following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course coordinator and programme coordinator.
2. Each group should conduct different activity and no repeating should occur

1	How to install and Uninstall an Operating System on a New Computer
2	How to Remove a Second Operating System from a PC
3	A Survey of recent Operating System
4	Case study on real time deadlock situation
5	A case study on real time process synchronization
6	Comparison of OS working in single core and multi core environment
7	Comparison of 32 bits and 64 bits OS
8	Operating system is responsible for following activities in connection with management of memory: <ul style="list-style-type: none"> • Allocation and de allocation of memory as and when needed • Keeping track of used and unused memory space. • Deciding what process to be loaded into memory in case space becomes available.
9	For secondary space management: <ul style="list-style-type: none"> • Swap space and free space management • Disk scheduling

	<ul style="list-style-type: none"> Allocating space to the data and programs onto the secondary storage device.
10	For process management: <ul style="list-style-type: none"> Creation, deletion of both user and system process. Handling process synchronization. Deadlock handling.

Course Delivery

The course will be delivered through lectures and Power point presentations/ Video

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE	IA	Students	Three IA tests (Average of three tests will be computed)	20	Blue books	1,2,3,4
				Student activities	05	Report	1,2,3,4
				Total	25		
	SE	End Exam		End of the course	100	Answer scripts at BTE	1,2,3,4
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1 & 2 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1,2,3,4 Effectiveness of Delivery of instructions & Assessment Methods

Note: I.A. test shall be conducted for 20 marks. Average marks of three tests shall be rounded off to the next higher digit.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	20
2	Understanding	50
3	Application	30

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

- Blue books (20 marks)
- Student suggested activities report for 5 marks
- Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

FORMAT OF I A TEST QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th week of sem 10-11 Am	I/II SEM		20			
	Year:					
Name of Course coordinator : CO's: _____			Units: __			
Question no	Question		MARKS	CL	CO	PO
1						
2						
3						
4						

Note: Internal choice may be given in each CO at the same cognitive level (CL).

MODEL QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks															
Ex: I test/6 th week of sem 10-11 AM	IV SEM	Operating System	20															
	Year: 2015-16	Course code:15CS43T																
Name of Course coordinator : Units:1,2 Co: 1,2			Note: Answer all questions															
Question no	Question		CL	CO	PO													
1	Explain OS in user's view and system's view. (5)		U	1	1,2													
2	Explain the computer system architecture (5)		U	1	1,2													
3	Consider the following set of process with the length of the CPU burst time given in milliseconds <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Process</td> <td style="padding: 5px;">Burst time</td> <td style="padding: 5px;">Priority</td> </tr> <tr> <td style="padding: 5px;">P1</td> <td style="padding: 5px;">9</td> <td style="padding: 5px;">3</td> </tr> <tr> <td style="padding: 5px;">P2</td> <td style="padding: 5px;">11</td> <td style="padding: 5px;">1</td> </tr> <tr> <td style="padding: 5px;">P3</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">3</td> </tr> </table> The processes are assumed to have arrived in the order P ₁ , P ₂ , P ₃ all at time 0. What is the waiting time and turnaround time of each process for FCFS & PRIORITY scheduling algorithms? (5)		Process	Burst time	Priority	P1	9	3	P2	11	1	P3	3	3	A	2	1,2	
Process	Burst time	Priority																
P1	9	3																
P2	11	1																
P3	3	3																
4	What is a process? Draw and explain the state transition diagram of a process.		U	2	1,2													

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Diploma in Computer science & Engineering**IV- Semester****Course Title: Operating System**Time: **3 Hours**Max Marks: **100****PART-A****Answer any SIX questions. Each carries 5 marks.****5X6=30 Marks**

1. Write a note on client/server computing.
2. Explain the contents of PCB with neat diagram.
3. Explain the different scheduling criteria.
4. Write a note on critical-section problem and the solution to solve it.
5. How deadlock can be avoided using resource allocation graph? Explain
6. What is fragmentation? Differentiate between internal and external fragmentation.
7. Explain swapping technique with a neat diagram
8. Write a note on Copy-on-write.
9. Discuss briefly client-server model of file sharing

PART-B**Answer any SEVEN full questions each carries 10 marks.****10X7=70 Marks**

1. What are the different operating system operations.
2. Different activities in connection with process management, memory management and storage management
3. Consider the following set of process with the length of the CPU burst time given in milliseconds

Process	Burst Time	Priority
P ₁	10	3
P ₂	13	1
P ₃	3	3
P ₄	8	4

The processes are assumed to have arrived in the order P₁, P₂, P₃ & P₄ all at time 0.

- a. Draw the Gantt chart for FCFS and PRIORITY scheduling algorithms.
- b. What is the waiting time and turnaround time of each process for FCFS & PRIORITY scheduling algorithms.
- c. Calculate the average waiting time and average turnaround time for FCFS & PRIORITY scheduling algorithms.

4. Explain the different operations on processes.
5. Explain the banker's algorithm.
6. List and explain different structure of the page table with a neat diagram
7. Explain the contiguous memory allocation.
8. Consider the following reference string: 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6. How many page faults would occur for the following page replacement algorithm assuming 3 page frames: 1) LRU 2) FIFO 3) Optimal Page Replacement.
9. List out common file types with their extension and functions
10. Explain Tree-structured directory and Acyclic-graph directory with a neat diagrams



MODEL QUESTION BANK

Diploma in Computer Science & Engineering

IV Semester


Course Title: Operating System

CO	Question	CL	Marks												
I	Write a note on protection and security.	U	05												
	Write a note on client/server computing.	U													
	Discuss time sharing system.	U													
	Explain distributed system.	U													
	Explain the peer-to-peer computing.	U													
	Explain OS in user's view and system's view.	U													
	List the advantages and disadvantages of multiprogramming system	U	10												
	What is an operating system? Explain the computer system architecture.	U													
	What are the different operating system operations?	U													
	Compare process management and memory management.	U													
	Explain the special-purpose systems.	U													
	Explain clustered system.	U													
II	Different activities in connection with process management, memory management and storage management.	U	05												
	What is a process? Draw and explain the state transition diagram of a process.	U													
	Explain the contents of PCB with neat diagram.	U													
	Compare long-term, short-term and medium-term scheduler.	U													
	Explain the different scheduling criteria.	U	10												
	Explain the different operations on processes.	U													
	What is inter-process communication (IPC). Explain the two models of IPC with neat diagram.	U													
	Consider the following set of process with the length of the CPU burst time given in milliseconds	A													
	<table border="0" style="margin-left: 40px;"> <tr> <td>Process</td> <td>Burst time</td> <td>priority</td> </tr> <tr> <td>P1</td> <td>10</td> <td>3</td> </tr> <tr> <td>P2</td> <td>13</td> <td>1</td> </tr> <tr> <td>P3</td> <td>3</td> <td>3</td> </tr> </table>	Process		Burst time	priority	P1	10	3	P2	13	1	P3	3	3	
	Process	Burst time		priority											
P1	10	3													
P2	13	1													
P3	3	3													
The processes are assumed to have arrived in the order P ₁ , P ₂ , P ₃ all at time 0. <ol style="list-style-type: none"> Draw the Gantt chart for FCFS and PRIORITY scheduling algorithms. What is the waiting time and turnaround time of each process for FCFS & PRIORITY scheduling algorithms? Calculate the average waiting time and average turnaround time for FCFS & PRIORITY scheduling algorithms. 															
Similar Problems															
III	Write a note on semaphores.	U	05												
	Explain the 3 requirements for the solution to critical-section problem.	A													
	Write a note on critical-section problem and the solution to solve it.	A													

	What is deadlock? What are the necessary conditions for deadlock?	U	10
	How deadlock can be prevented? Explain.	U	
	How deadlock can be avoided using resource allocation graph? Explain.	A	
	Explain how to recover from deadlock.	U	
	How deadlock can be detected? Explain.	U	
	Explain the banker's algorithm.	U	
	Explain resource-allocation graph with deadlock and without deadlock with examples.	A	
IV	Write a note on shared pages.	U	05
	Explain First-fit, Best-fit and Worst-fit strategies for memory allocation.	U	
	What is fragmentation? Differentiate between internal and external fragmentation.	U	
	Explain basic concept of memory allocation using paging	U	
	Explain how memory is protected in paging with a neat diagram.	U	
	Differentiate between logical and physical address space	U	10
	Explain address binding with a neat diagram.	U	
	Explain swapping technique with a neat diagram.	U	
	Explain the contiguous memory allocation.	U	
	Explain hardware implementation of page table with a neat diagram	A	
List and explain different structure of the page table with a neat diagram.	A	10	
What is segmentation? Draw and explain its hardware support.	A		
V	Explain the virtual memory concept with a neat diagram	U	05
	Explain virtual address space with a neat diagram.	U	
	Explain demand paging with a neat diagram.	U	
	Explain the steps for handling page fault with a neat diagram.	U	
	Write a note on Copy-on-write.	U	
	Explain the need for page replacement.	U	10
	How frames are allocated? Explain.	U	
	Explain the steps involved in the basic page replacement with diagram.	U	
Consider the following reference string: 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6. How many page faults would occur for the following page replacement algorithm assuming 3 page frames: 1) LRU 2) FIFO 3) Optimal Page Replacement. Similar Problems	A		
VI	Briefly explain the operations that can be performed on files.	U	05
	What are the different operations performed on a directory.	U	
	Write a note on remote file systems.	U	
	Discuss briefly client-server model of file sharing.	U	
	Define file and explain the different file attributes.	U	10
	List out common file types with their extension and functions.	U	
	Differentiate between sequential access and direct access methods.	U	
	Explain Single-level directory and Two-level directory with a neat diagram.	A	
	Explain Tree-structured directory and Acyclic-graph directory with a neat diagram.	A	



Government of Karnataka
Department of Technical Education
Board of Technical Examinations, Bangalore

	Course Title: PROFESSIONAL ETHICS & INDIAN CONSTITUTION		
	Scheme (L:T:P) : 4:0:0	Total Contact Hours: 52	Course Code: 15CS44T
	Type of Course: Lectures, Self Study & Quiz	Credit : 04	Core/ Elective: Core
CIE- 25 Marks		SEE- 100 Marks	

Prerequisites: Enthusiasm to learn the subject

Course Objectives:

1. To create an awareness on Engineering Ethics and Human Values.
2. To instill Moral and Social Values and Loyalty.
3. Create awareness among engineers about their social responsibilities
4. Appreciate the Ethical issues
5. To Know the Human rights and concept of women empowerment
6. To know features of our constitution.

Course Outcomes:

On successful completion of the course, the students will be able to attain CO:

Course Outcome		CL	Linked PO	Teaching Hrs
CO1	Practice the moral values that ought to guide the Engineering profession.	<i>R/U</i>	5,6,7,8,10	10
CO2	Discover of the set of justified moral principles of obligation, ideals that ought to be endorsed by the engineers and apply them to concrete situations	<i>U/A</i>	5,7,8,10	09
CO3	Know the definitions of risk and safety also discover different factors that affect the perception of risk	<i>R/U</i>	5,6,7,10	05
CO4	Appreciate the Ethical issues and Know the code of ethics adopted in various professional body's and industries	<i>R/U</i>	5,6,7,10	06
CO5	Justify the need for protection of human rights and to know about concept of women empowerment	<i>R/U</i>	5,6,7,8,10	8
CO6	Know the successful functioning of democracy in India	<i>R/U</i>	5,6,7,9,10	14
Total sessions				52

Legend: R; Remember, U: Understand A: Application

COURSE-PO ATTAINMENT MATRIX

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
PROFESSIONAL ETHICS & INDIAN CONSTITUTION	-	-	-	-	3	3	3	3	2	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.
 If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3
 If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2
 If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1
 If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

COURSE CONTENT AND BLUE PRINT OF MARKS FOR SEE

Unit No	Unit Name	Hour	Questions to be set for SEE			Marks weightage	weightage (%)
			R	U	A		
1	HUMAN VALUES	10	15	15	-	30	21
2	ENGINEERING ETHICS	09	10	15	-	25	17
3	SAFETY, RESPONSIBILITIES OF ENGINEERS	05	05	-	10	15	11
4	ETHICAL ISSUES IN ENGINEERING PRACTICE	06	05	05	5	15	11
5	HUMAN RIGHTS	8		15	5	20	13
6	INDIAN CONSTITUTION	14		25	15	40	27
	Total	52	35	75	35	145	100

Legend: R; Remember, U: Understand A: Application

UNITI: HUMAN VALUES**10Hrs**

Professional Ethics-Objectives of study of professional ethics-Human values- Definition of Morals and Ethics-Difference between Morality and Ethics-Values-Definition-Types of values-Definition of Integrity- Concept of Work Ethic- Service Learning- Definition Virtues-Definition-Civic Virtue-Duties and Rights - Respect for Others – Attitude and values, opinions-changing attitude-beliefs-Reliability-Living Peacefully-Means to be adopted for leaving peacefully-Caring-Sharing-Honesty-Valuing Time-Co-operation-Commitment-Empathy-Self-Confidence-Spirituality.

UNITII: ENGINEERING ETHICS**09Hrs**

Engineering ethics-Definition-Approach-Senses of Engineering Ethics-variety of moral issues–Inquiry-Types-Moral dilemmas-Steps to solve dilemma-Moral autonomy –Definition-consensus & controversy –Profession-Definition–Ethical theories-Theories about right action Personality–Self control- Self-interest –Self respect.

UNITIII: SAFETY, RESPONSIBILITIES OF ENGINEERS**05Hrs**

Safety and risk-definition- - assessment of safety and risk - risk benefit analysis and reducing risk –Personal risk-Public risk-Reducing risk-Voluntary Risk-Collegiality and loyalty–Authority-Types- collective bargaining -occupational crime –Responsibility of engineers–Types-Social responsibility-Professional responsibility-confidentiality-conflicts of interest-liability

UNIT IV: ETHICAL ISSUES IN ENGINEERING PRACTICE**06Hrs**

Ethical issues–Industrial standards-Environmental ethics –Plastic waste disposal-E-Waste Disposal-Semi conductor waste Disposal-Industrial waste disposal-Human centred environmental ethics- computer ethics –Types of issues-Computer as the Instrument and Object of Unethical Acts -Engineers as managers-Codes of ethics-Sample code of Ethics like -Institution of Engineers(India)-Institute of Electrical & Electronics engineers- Institute of Electronics & Telecommunication Engineers - Indian Institute of Materials Management.

UNIT V: HUMAN RIGHTS**8 Hrs**

Human Rights-Definition-constitutional provisions-right to life and liberty-Human Rights of Women-Discrimination against women- steps that are to be taken to eliminate discrimination against women in Education, employment, health care, Economic and social life, Women in rural areas- Status of Women in India - Constitutional Safeguards - Dowry Prohibition act 1961- Domestic violence act 2005- Sexual harassment at work place bill 2006-Human Rights of Children- Who is a child- list the Rights of the Child- Right to education--Protection of Children from Sexual Offences Act(POCSO)-2012- National Human Rights Commission- Constitution-Powers and function of the Commission-Employee rights- Provisions made-Contractual-Non contractual employee rights-Whistle blowing-definition-Aspects-Intellectual Property Rights (IPR)–Meaning-Need for protection- Briefly description of concept of patents, Copy right, Trade mark.

Introduction to constitution of India-Formation and Composition of the Constituent Assembly- Salient features of the Constitution-Preamble to the Indian Constitution Fundamental Rights- Fundamental Duties-Directive principles of state policy.

Parliamentary system of governance- Structure of Parliament- Lokhasabha and Rajyasabha - Functions of parliament- Legislative, Executive, Financial Function, Powers of Loksabha and Rajya Sabha- Procedure followed in parliament in making law-Structure of union executive- Power and position of President, Vice President, Prime minister and council of ministers. Structure of the judiciary: Jurisdiction and functions of Supreme Court, high court, and subordinate courts

Federalism in the Indian constitution, Division of Powers- Union list, State list and concurrent list, Structure of state legislation, Legislative assembly and Legislative council, Functions of state legislature, Structure of state executive-Powers and positions of Governor, Speaker, Deputy Speaker, Chief Minister and council of minister.

Local self government- meaning-Three tiers system-Village panchayath-Taluk panchayath-Zilla panchayath-Local bodies-Municipalities and Corporations, Bruhath mahanagara Palike. Functions of Election commission, UPSC, KPSC.

MODEL QUESTION PAPER

4- Semester Diploma Examination

PROFESSIONAL ETHICS & INDIAN CONSTITUTION

Time: **3**

Hours]

[Max Marks: 100

Note: Answer

any SIX from Part A and any SEVEN from Part B

PART-A

6x5=30 marks

1. Distinguish between 'morality' and 'ethics'
2. Explain the terms, 'Profession', 'Professional', and 'Professionalism'?
3. Name a few techniques (steps) to reduce risks?
4. List the ill effects of E waste disposal on environment?
5. Explain the role of computers as object of Unethical Acts?
6. State various provisions under 'human rights'?
7. Differentiate between 'Patent' and 'Trade secret'?
8. State the function of Governor?
9. Write Note on gram panchayaths?

PART-B

7x10=70 marks

10. Illustrate the ethical aspect principle of caring or sharing, with an example?
11. Explain various actions of an engineer leading to dishonesty?
12. List the situations when moral dilemmas arise?

13. Distinguish between 'Social responsibility' and 'Professional responsibility'?
14. Explain Occupational crime?
15. Explain code of Ethics followed in Institution of Engineers?
16. Explain Sexual harassment at work place bill 2006?
17. Explain the basic structure of Parliament?
18. Explain the formation and functions of state high Court?
19. State the role of following members in Rajyasabha?:
 - a) Chairman
 - b) Leader of the house
 - c) Opposition leader



MODEL QUESTION BANK

4th Semester

Course title: PROFESSIONAL ETHICS & INDIAN CONSTITUTION

CO1: PRACTICE THE MORAL VALUES THAT OUGHT TO GUIDE THE ENGINEERING PROFESSION.

Level-1: Remember

1. List the key trends in engineering ethics?
2. Distinguish between 'morality' and 'ethics'?
3. List different types of values and give a few examples in each?
4. List the civic virtues one should develop?
5. List the types of virtues, with an example for each
6. List the factors for one to work peacefully?
7. List different ways the honesty reflects?
8. List the benefits of empathy?

Level-2: Understand

9. Explain the term 'respect for others' with suitable example?
10. Explain what should one do or not to do live peacefully?
11. Distinguish between 'caring' and 'sharing'?
12. What are the impediments to proper co-operation?
13. Explain the factors that shape self-confidence in a person?
14. Explain two methods of developing self-confidence?
15. Illustrate the ethical aspect principle of caring or sharing, with an example?
16. Explain various actions of an engineer leading to dishonesty?
17. Explain Service Learning?

CO2: DISCOVER OF THE SET OF JUSTIFIED MORAL PRINCIPLES OF OBLIGATION, IDEALS THAT OUGHT TO BE ENDORSED BY THE ENGINEERS AND APPLY THEM TO CONCRETE SITUATIONS

Level-1: Remember

1. List the objectives of this course 'professional ethics'?
2. Define Engineering Ethics?
3. State the two approaches to Engineering ethics?
4. Define the term, 'moral dilemma'?
5. List the situations when moral dilemmas arise?
6. List the steps in confronting moral dilemma?
7. State the five characteristics of professionals?
8. State the specific virtues relating to honesty?
9. Define 'corporate responsibility'
10. Define 'corporate accountability'?
11. List the skills required to handle moral problems/issues in engineering ethics?

Level-2: Understand

12. Why do people behave unethically?
13. Why and how do moral problems arise in a profession?
14. Explain the moral dilemma
15. Explain the difficulties in solving moral problems?
16. Explain the relation between autonomy and authority?
17. Highlight the principle of 'pre-conventional level' of moral development?
18. Explain the terms, 'Profession', 'Professional', and 'Professionalism'?
19. Describe the virtues fulfilled under professional responsibility?
20. What is moral integrity? Write on its significance?
21. Distinguish between causal responsibility, moral responsibility and Legal responsibility?
22. Where and how do moral problems arise in engineering practice? Justify the safety and other obligations of professional engineers?

CO3: KNOW THE DEFINITIONS OF RISK AND SAFETY ALSO DISCOVER DIFFERENT FACTORS THAT AFFECT THE PERCEPTION OF RISK

Level-1: Remember

1. Name the factors that influence the perception of risk?
2. List the factors that affect the risk acceptability?
3. Name a few techniques (steps) to reduce risks?
4. List various aspects of collegiality?
5. List factors/principles to justify 'confidentiality'?

Level-2: Understand

6. Describe 'institutional authority' with an example?
7. What is meant by Professional Responsibility?

Level-3: Application

8. Explain 'collective bargaining with example?
9. Explain briefly 'institutional authority'?
10. Explain Occupational crime?

CO4: APPRECIATE THE ETHICAL ISSUES AND KNOW THE CODE OF ETHICS ADOPTED IN VARIOUS PROFESSIONAL BODY'S AND INDUSTRIES

Level-1: Remember

1. List the ill effects of E waste disposal on environment?
2. Define 'computer ethics'? List the issues in 'computer ethics'?
3. Name different types of problems in 'computer ethics'?
4. List the ethical problems by computers in workplace?

Level-2: Understand

5. Describe briefly on code of ethics?
6. What are the duties of an engineer as an experimenter, in environmental ethics?
7. How the plastic waste disposals create havocs?
8. Discuss on Industrial waste disposal creating disasters on environment?

Level-3: Application

9. Explain 'environmental ethics'?
10. Explain human centred environmental ethics?
11. Explain the role of computers as instruments?
12. Explain the role of computers as object of Unethical Acts?
13. Explain the role of engineers as managers?
14. Explain code of Ethics followed in Institution of Engineers?
15. Explain code of Indian Institute of Materials Management?

CO 5: JUSTIFY THE NEED FOR PROTECTION OF HUMAN RIGHTS AND TO KNOW ABOUT CONCEPT OF WOMEN EMPOWERMENT

Level-1: Remember

1. State various provisions under 'human rights'?
2. List the features of 'international human rights'?
3. State the provisions under professional rights?
4. State the features of the employee rights?
5. List the principles of *conflict resolution*?
6. List the various Special Programs for Women's Development from government?

Level-2: Understand

7. Describe briefly 'trademark'?
8. Differentiate between 'Patent' and 'Trade secret'?
9. Describe 'intellectual property rights'?

Level-3: Application

10. Explain briefly the 'copyright'?
11. Explain briefly about patents?
12. Explain the concept of women empowerment?
13. Explain woman and Development?
14. Explain Dowry Prohibition act 1961?
15. Explain POCSO act 2012?
16. Explain domestic violence act 2005?
17. Explain Sexual harassment at work place bill 2006?

CO6: KNOW THE SUCCESSFUL FUNCTIONING OF DEMOCRACY IN INDIA

Level-1: Remember

1. List the function and powers of parliament?
2. State the positions and powers of the Governor?
3. State the powers and Functions of the Chief Minister?
4. State the functions of Taluk panchayaths?
5. State the functions of Zilla panchayaths?
6. List the functions of urban local bodies?
7. State the powers of the president?
8. State the functions of the president?
9. State the powers and Functions of the prime minister?

Level-2: Understand

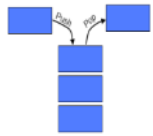
10. Describe briefly about Indian constitution?
11. Write about structure of Parliament?
12. What are the Procedure followed in parliament in making law?
13. Describe the role of gram panchayaths in community upliftment?
14. Describe the role of: a) Chairman b) Leader of the house c) Opposition leader in Rajyasabha?
15. Describe importance of Judiciary?
16. Describe the Structure of state legislation
17. Describe the Jurisdiction of Supreme court,
18. Describe the Jurisdiction high court?

Level-3: Application

19. Explain the Formation & Composition of constituent assembly?
20. Explain preamble and its main objectives of Indian constitution?
21. Explain the fundamental Rights of Every citizen?
22. Explain the fundamental Duties of Every citizen?
23. Explain salient features of Indian constitution?
24. Explain the basic structure of Parliament?
25. Explain the composition of Lokasabha?
26. Explain the composition of Rajyasabha?
27. Explain the Directive principles of state policy?
28. Explain the Structure Of The Judiciary?
29. Explain the Powers of Rajya Sabha and Loksabha ?
30. Describe briefly about, Division of Powers- Union list, State list and concurrent list,
31. Explain the federalism in the Indian constitution ?
32. Explain the role of vice president?
33. Explain the role of State council of ministers?
34. Explain the functions of Zilla panchayaths?
35. Explain the formation and functions of Supreme Court?
36. Explain the formation and functions of state high Court?
37. Explain the formation and functions of subordinate courts?
38. Explain the formation of three tier system for local self government?



Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: Data Structures lab		
	Scheme (L:T:P) : 0:2:4	Total Contact Hours: 78	Course Code: 15CS45P
	Type of Course: Tutorial and Practical's	Credit : 03	Core/ Elective: Core
CIE- 25 Marks		SEE- 50 Marks	

Prerequisites

Knowledge of programming language.

Course Objectives

Design and Develop programs on derived data types and data structures such as stack, queue, linked list, sorting and searching.

Course Outcome

On successful completion of the course, the students will be able to attain CO:

Course Outcome		Experiment linked	CL	Linked PO	Teaching Hrs
CO1	Demonstrate the concepts of pointers	<i>1 to 5</i>	<i>U</i>	2,3,4,8,10	15
CO2	Design programs based on the concepts of structures and files.	<i>6 to 9</i>	<i>U/A</i>	2,3,4,8,10	12
CO3	Demonstrate the concepts of Stack, Queue and Linked List and apply various operations on them.	<i>10 to 15</i>	<i>U/A</i>	2,3,4,8,10	21
CO4	Demonstrate the concept of binary tree traversal and its operations.	<i>16</i>	<i>U/A</i>	2,3,4,8,10	06
CO5	Design programs based on the concept of sorting and searching techniques.	<i>17 to 20</i>	<i>U/A</i>	2,3,4,8,10	24
			Total sessions		78

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
Data Structures lab	-	3	3	3	-	-	-	3	-	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

List of Graded Practical Exercises

Sl. No	PART – A
1	Write a C program to illustrate the use of pointers in arithmetic operations.
2	Write a C program to swap two numbers using Call by value and Call by reference parameter passing techniques.
3	Write a C program to find the smallest element in an array of 10 elements using pointers.
4	Write a C program to create a dynamic array of integers using pointers.
5	Write a C program to illustrate the use of function pointer.
6	Write a C program to count the number of characters in a given file.
7	Write a C program to create a file that contains at least 5 records which consists of Book No., Book Name, Author, Publisher, and price.
8	Write a C program to display the contents of the file created in program No. 5 in the following format <div style="text-align: center;"> Book No. Book Name Author Publisher Price </div>
9	Write a C program to copy one file to another file using command line arguments.
Sl. No	PART – B
10	Write a C program to implement singly linked list: insert, delete, search and display.
11	Write a C program to illustrate Stack operations using arrays.
12	Write a C program to find the GCD of two numbers using recursion
13	Write a C program to evaluate a POSTFIX expression using stack operations.
14	Write a C program to implement queue using arrays.
15	Write a C program to implement queue using linked list.
16	Write a C program to implement binary tree traversal operations.
17	Write a C program to sort an array using bubble sort
18	Write a C program to sort an array using selection sort.
19	Write a C program to search a given number using linear search.
20	Write a C program to search a given number using binary search.

Reference

1. Data Structures using C by E. Balaguruswamy - Tata McGraw-Hill Education
2. Data Structures using C by Aaron M Tenenbaum - Pearson Education India

Suggested list of student activities

Note: the following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course coordinator and programme coordinator.
2. Each group should conduct different activity and no repeating should occur

1	Conduct a survey on various uses of pointers and submit a report of 2 pages.
1	Conduct a survey on the real time applications of Stacks and Queues and submit a report of 3 to 4 pages.
2	Conduct a survey on the real time applications of Linked Lists and Trees and submit a report of 3 to 4 pages.
3	Compare C structures and Java Classes and submit a report.
4	Quiz, Presentation and Seminars

Course Delivery

The course will be delivered through Demonstration and Practices

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE (Continuous Internal Evaluation)	IA	Students	Twice tests (average of two tests)	10	Blue books	1 to 5
		Record and		10	Record	1 to 5	
		Student activity		05	Report.		
		Total		25			
	SEE (Semester End Examination)	End Exam		End of the course	50	Answer scripts at BTE	1 to 5
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1 to 5 Effectiveness of Delivery of instructions & Assessment Methods

*CIE – Continuous Internal Evaluation

*SEE – Semester End Examination

Note:

1. I.A. test shall be conducted as per SEE scheme of valuation. However obtained marks shall be reduced to 10 marks. Average marks of two tests shall be rounded off to the next higher digit.
2. Rubrics to be devised appropriately by the concerned faculty to assess Student activities.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	30
3	Application	60

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue Book(10 marks)
2. Record (10 marks)
3. Student suggested activities report for 5 marks
4. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Scheme of Valuation for End Examination

1	Writing one program from PART-A and one program from PART-B	10+10=20
2	Executing any one program with result	20
3	Viva	10
Total		50

***Evaluation should be based on the screen output only. No hard copy required.*

***Change of question is allowed only once. Marks of 05 should be deducted in the given question.*

Resource requirements for Data Structures Lab

(For an Intake of 60 Students [3 Batches])

Sl. No.	Equipment	Quantity
1	PC systems (latest configurations with speakers)	20
2	Laser Printers	01
3	Networking (Structured) with CAT 6e / wireless 24 Port switches / Wireless Router I/O Boxes for networking(as required)	03
4	Broad Band Connection	01

***Open Source Software should be encouraged*




MODEL QUESTION BANK

Sl. No	PART – A
1	Write a C program to illustrate the use of pointers in arithmetic operations.
2	Write a C program to swap two numbers using Call by value and Call by reference parameter passing techniques.
3	Write a C program to find the smallest element in an array of 10 elements using pointers.
4	Write a C program to create a dynamic array of integers using pointers.
5	Write a C program to illustrate the use of function pointer.
6	Write a C program to count the number of characters in a given file.
7	Write a C program to create a file that contains at least 5 records which consists of Book No., Book Name, Author, Publisher, and price.
8	Write a C program to display the contents of the file created in program No. 5 in the following format Book No. Book Name Author Publisher Price
9	Write a C program to copy one file to another file using command line arguments.
Sl. No	PART – B
10	Write a C program to implement singly linked list: insert, delete, search and display.
11	Write a C program to illustrate Stack operations using arrays.
12	Write a C program to find the GCD of two numbers using recursion
13	Write a C program to evaluate a POSTFIX expression using stack operations.
14	Write a C program to implement queue using arrays.
15	Write a C program to implement queue using linked list.
16	Write a C program to implement binary tree traversal operations.
17	Write a C program to sort an array using bubble sort
18	Write a C program to sort an array using selection sort.
19	Write a C program to search a given number using linear search.
20	Write a C program to search a given number using binary search.



Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: OOP with Java Lab		
	Scheme (L:T:P) : 0:2:4	Total Contact Hours: 78	Course Code: 15CS46P
	Type of Course: Tutorial and Practical's	Credit : 03	Core/ Elective: Core
CIE- 25 Marks		SEE- 50 Marks	

Prerequisites

C Programming Knowledge.

Course Objectives

Learn to write, debug, and document well-structured Java applications.

Course Outcome

On successful completion of the course, the students will be able to attain CO:

Course Outcome		Experiment linked	CL	Linked PO	Teaching Hrs
CO1	Create and use classes and Objects.	<i>1 to 7</i>	<i>U, A</i>	2,3,4,8,10	30
CO2	Demonstrate the methods of String, String Buffer, Vector and Wrapper Classes.	<i>8 to 10</i>	<i>U, A</i>	2,3,4,8,10	15
CO3	Implement interfaces and inheritance.	<i>11 to 13</i>	<i>U, A</i>	2,3,4,8,10	15
CO4	Demonstrate the use of packages.	<i>14</i>	<i>U, A</i>	2,3,4,8,10	6
CO5	Implement Multithreading concepts	<i>15</i>	<i>U, A</i>	2,3,4,8,10	6
CO6	Demonstrate programming techniques with exception handling.	<i>16</i>	<i>U, A</i>	2,3,4,8,10	6
			Total sessions		78

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
OOP with Java Lab	-	3	3	3	-	-	-	3	-	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

LIST OF GRADED PRACTICAL EXERCISES

Sl.No	Practical/Exercise
1	Write a Java Program to sort a list of names selection sort technique.
2	Write a Java Program to define a class, describe its constructor, overload the Constructors and instantiate its object.
3	Write a Java Program to define a class, define instance methods for setting and Retrieving values of instance variables and instantiate its object.
4	Write a Java Program to define a class, define instance methods and overload them and use them for dynamic method invocation.
5	Write a Java Program to demonstrate use of sub class.
6	Write a Java Program to demonstrate use of nested class.
7	Write a Java Program to implement array of objects.
8	Write a Java program to practice - using String class and its methods. - using String Buffer class and its methods.
9	Write a Java Program to implement Vector class and its methods.
10	Write a Java Program to implement Wrapper classes and their methods.
11	Write a Java Program to implement inheritance and demonstrate use of method overriding.
12	Write a Java Program to implement multilevel inheritance by applying various access controls to its data members and methods.
13	Write a program to demonstrate - use of implementing interfaces. - use of extending interfaces.
14	Write a Java program to implement the concept of importing classes from user defined package and creating packages.
15	Write a program to implement the concept of threading. -by extending Thread Class -by implementing Runnable Interface
16	Write a program to implement the concept of Exception Handling - using predefined exception. - by creating user defined exceptions.

Reference

1. Programming with Java, 4th edition, Balagurusamy, Mc Graw Hill, ISBN-9780070141698
2. Computer Programming in Java, Junaid Khateeb and Dr. G.T. Thampi, Wiley Dreamtech, ISBN: 9788177228298

Suggested list of student activities

Note: the following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 2-3 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course co-ordinator and programme co-ordinator.
2. Each group should conduct different activity and no repeating should occur.
Some of the topics for mini projects are: ♦ Hotel Management System ♦ E-Bill Board, Online insurance ♦ Online Mobile Contributor ♦ Online Restaurant ♦ Public Distribution System ♦ SECURE E-banking security ♦ Service Call Management ♦ Secure location system ♦ Standard DB Editor ♦ Flight Reservation System ♦ Job Service Provider ♦ Net Chattering ♦ Hospital Management System ♦ E – Shopping Mall, Personalized web search engine ♦ E-health Care ♦ Telecom Linkage System ♦ Multi Message communication and file sharing system in network ♦ ATM Database System ♦ Health record System using referral ♦ Online Library management ♦ Typing text recognition ♦ Online bus ticket booking ♦ Birthday reminder via Email ♦ Time table management system for college ♦ Agriculture Management System ♦ District medical data center ♦ etc.

Course Delivery

The course will be delivered through Demonstration and Practices

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE (Continuous Internal Evaluation)	IA	Students	Two tests (average of two tests)	10	Blue books	1 to 6
				Record	10	Record	1 to 6
				Student activity	05	Report	
	Total	25					
	SEE (Semester End Examination)	End Exam		End of the course	50	Answer scripts at BTE	1 to 6
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2,3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1 to 6 Effectiveness of Delivery of instructions & Assessment Methods

*CIE – Continuous Internal Evaluation

*SEE – Semester End Examination

Note:

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2. Rubrics to be devised appropriately by the concerned faculty to assess Student activities.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	30
3	Application	60

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue Book(10 marks)
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4. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
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Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Scheme of Valuation for End Examination

1	Writing two programs	10+10=20
2	Executing any one program	20
3	Viva Voice	10
Total		50

***Evaluation should be based on the screen output only. No hard copy required.*

***Change of question is allowed only once. Marks of 05 should be deducted in the given question.*

Resource requirements for OOP with Java Lab

(For an Intake of 60 Students [3 Batches])

Sl. No.	Equipment	Quantity
1	PC systems (latest configurations with speakers)	20
2	Laser Printers	01
3	Networking (Structured) with CAT 6e / wireless 24 Port switches / Wireless Router I/O Boxes for networking(as required)	03
4	Broad Band Connection	01

***Open Source Software should be encouraged*

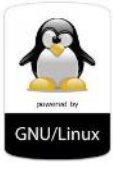


MODEL QUESTION BANK

1	Write a Java Program to sort a list of names selection sort technique.
2	Write a Java Program to define a class, describe its constructor, overload the Constructors and instantiate its object.
3	Write a Java Program to define a class, define instance methods for setting and Retrieving values of instance variables and instantiate its object.
4	Write a Java Program to define a class, define instance methods and overload them and use them for dynamic method invocation.
5	Write a Java Program to demonstrate use of sub class.
6	Write a Java Program to demonstrate use of nested class.
7	Write a Java Program to implement array of objects.
8	Write a Java program to practice - using String class and its methods. - using String Buffer class and its methods.
9	Write a Java Program to implement Vector class and its methods.
10	Write a Java Program to implement Wrapper classes and their methods.
11	Write a Java Program to implement inheritance and demonstrate use of method overriding.
12	Write a Java Program to implement multilevel inheritance by applying various access controls to its data members and methods.
13	Write a program to demonstrate - use of implementing interfaces. - use of extending interfaces.
14	Write a Java program to implement the concept of importing classes from user defined package and creating packages.
15	Write a program to implement the concept of threading. -by extending Thread Class -by implementing Runnable Interface
16	Write a program to implement the concept of Exception Handling - using predefined exception. - by creating user defined exceptions.



Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: Linux Lab		
	Scheme (L:T:P) : 0:2:4	Total Contact Hours: 78	Course Code: 15CS47P
	Type of Course: Tutorial, Practical's & Student Activity	Credit : 03	Core/ Elective: Core
CIE- 25 Marks		SEE- 50 Marks	

Prerequisites

Basic Knowledge of Operating System and its usage.

Course Objectives

1. Describe the basic file system in Linux and its file attributes.
2. Appraise different filters, process handling, regular expressions and network handling features using suitable commands.
3. Summarize different Linux commands to write Shell Programs.

On successful completion of the course, the students will be able to attain CO:

Course Outcome		Experiment linked	CL	Linked PO	Teaching Hrs
CO1	Demonstrate installation of Linux operating system and understand the importance of Linux.	<i>1</i>	<i>U</i>	2,3,4,8,10	06
CO2	Appraise various command usage of files and directories.	<i>2 to 4</i>	<i>U, A</i>	2,3,4,8,10	12
CO3	Show the working of vi editor in all its modes using various commands.	<i>5 to 8</i>	<i>U, A</i>	2,3,4,8,10	12
CO4	Manage shell and processes using various commands.	<i>9 to 12</i>	<i>U, A</i>	2,3,4,8,10	12
CO5	Write Shell scripts and C programs using vi editor.	<i>13 to 21</i>	<i>A</i>	2,3,4,8,10	30
CO6	Demonstrate Linux administration and its environment	<i>22</i>	<i>A</i>	2,3,4,8,10	06
			Total sessions		78

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
Linux Lab	-	3	3	3	-	-	-	3	-	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

List of Graded Practical Exercises

PART-A

1. **Introduction-** Linux Architecture- Shell, Kernel, System calls.

Linux installation- Steps for installing Linux Operating System

Comparison between Linux and other Operating Systems, Applications of Linux Operating System.

2. **Internal & External commands in Linux.**

- Internal commands- echo, type, etc.
- External commands- ls, cp, mv, rm, cat, etc
- Other commands – tput clear, who, cal, date, bc, man, passwd, uname (with different options).

3. **Working with files & directories.**

- Know the categories of files.
- Directory related Commands – pwd, mkdir, rmdir, cd, ls
- Manipulating Absolute paths and Relative paths using **cd** command.
- File related Commands – cat, cp, mv, rm, comm, cmp, diff, tar, umask, wc

4. **Basic File attributes.**

- Listing seven attributes of a file : ls and its options
- File Permissions: Absolute and Relative permissions
- Manipulating File permissions using **chmod** command
- Manipulating File Ownership using **chown** command
- Manipulating Hardlink and Softlink using **ln** command

5. **Learn to use vi editor.**

- Three modes of **vi** editor.
- Input mode commands.
- Command mode commands.
- Ex mode commands.

6. **Simple Filters** – head, tail, cut, paste, sort, uniq, tr, pr.

7. **Expressions & search patterns** .(dot operator), *, ^, +, ?, grep, egrep, fgrep

8. **Process Management commands.**

- Process creation, status, Identifying process, ps -f & its options,
- Running process in background, Job control, and Process termination.

- Changing process priority, scheduling process (Usage of sleep and wait commands)

9. **Introduction to shell programming.**

- Introduction, Uses of shell script, Shell special characters, comments, command separator, escaping, quoting command substitution.
- Creating shell script, Shell identifiers, Shell variables, Destroying a variable, Positional parameters & command line arguments.
- Evaluating expressions, Text formatting with echo & tput script termination.

10. **Shell control structures**

- if, case, for, while, relational and logical operators,
- Advanced filter – sed and awk.

11. **Linux system administration**

Managing file system, Disk management utilities, mounts, umount, df, du, fdisk, su, useradd etc.

12. **Linux Environment**

Introduction, Environment variables, Command prompt system variables, Profiles, files, terminal variable stty command and its options, Command history, editing Environment variable.

PART – B

13. Write a shell script to display current date, time, username and directory.
14. Write script to determine whether given file exist or not, file name is supplied as command line argument, also check for sufficient number of command line argument
15. Write shell script to show various system configuration like:
 - a) Currently logged user name and his long name
 - b) Current shell
 - c) Your home directory
16. Write shell script to show various system configuration like:
 - a) Your operating system type
 - b) Your current path setting
 - c) Your current working directory
 - d) Show all available shells
17. Write a Shell script to accept any two file names and check their file permissions.
18. Write a Shell script to read a file name and change the existing file permissions.
19. Write a shell script to print current month calendar and to replace the current day number by '*' or '**' respectively.
20. Write a C-program to fork a child process and execute the given Linux commands.
21. Write a C-program to fork a child process, print owner process ID and its parent process ID.

22. Write a C-program to prompt the user for the name of the environment variable, check its validity and print an appropriate message.

References

1. "UNIX - Concepts and Applications", Sumitabha Das 4th Edition, Tata McGraw Hill, 2006.
2. <http://www.freeos.com/guides/lsst/>
3. <http://heather.cs.ucdavis.edu/~matloff/Linux/LinuxInstall.pdf> (Chapter 1, Linux installation).
4. http://docs.fedoraproject.org/en-US/Fedora/20/pdf/Installation_Guide/Fedora-20-Installation_Guide-en-US.pdf.

Suggested list of student activities

Note: the following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course coordinator and programme coordinator.
2. Each group should conduct different activity and no repeating should occur

1	Conduct a survey on the advantages of Linux Operating System and prepare a report of 2 to 3 pages.
2	Prepare Report of 2 to 3 pages on Linux Administration.
3	Conduct a survey on other editors available in Linux Operating System with their features and prepare a report of 2 to 3 pages.
4	Compare the file system in Linux with the file system in Windows and submit a report.
5	Conduct a case study on handling various Networking Commands in Linux Operating System and submit a report.

Course Delivery

The course will be delivered through tutorials of two hours and four hours of hands on practice per week.

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct assessment	CIE (Continuous Internal Evaluation)	IA Tests	Students	Two IA Tests (Average of two tests will be computed)	10	Blue books	1 to 6
				Record Writing (Average marks of each exercise to be computed)	10	Record Book	1 to 6
				Student Activities	05	Activities Report	1 to 6
				TOTAL	25		
	SEE (Semester End Examination)	End Exam		End of the course	50	Answer scripts at BTE	1 to 6
Indirect assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1 to 3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1 to 6 Effectiveness of Delivery of instructions & Assessment Methods

*CIE – Continuous Internal Evaluation

*SEE – Semester End Examination

Note:

1. I.A. test shall be conducted as per SEE scheme of valuation. However obtained marks shall be reduced to 10 marks. Average marks of two tests shall be rounded off to the next higher digit.
2. Rubrics to be devised appropriately by the concerned faculty to assess Student activities.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	30
3	Application	60

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue Book(10 marks)
2. Record (10 marks)
3. Student suggested activities report for 5 marks
4. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Scheme of Valuation for End Examination

1	Write the syntax of commands with examples from any one exercise from PART-A	10
2	Write any one program from PART-B	10
3	Execution of PART A commands and PART B Program with result	10+10
4	Viva voce	10
Total		50

***Evaluation should be based on the screen output only. No hard copy required.*

***Change of question is allowed only once. Marks of 05 should be deducted in the given question.*

Resource requirements for Linux Lab

(For an Intake of 60 Students [3 Batches])

Sl. No.	Equipment	Quantity
1	PC systems (latest configurations with speakers)	20
2	Laser Printers	01
3	Networking (Structured) with CAT 6e / wireless 24 Port switches / Wireless Router I/O Boxes for networking(as required)	03
4	Broad Band Connection	01

***Open Source Software should be encouraged*



MODEL QUESTION BANK

PART -A

1) Write the syntax and execute the following commands.

Command Name	Syntax	Example
Echo		
Ls		
Cat		
Rm		
Cal		

2) Write the syntax and execute the following commands.

Command Name	Syntax	Example
ls -l		
Chmod		
Chown		
ln		

3) Write the syntax and execute the following commands.

Command Name	Syntax	Example
Pwd		
Mkdir		
Cd		
Comm.		
Cmp		

4) Write the syntax and execute the following commands.

Command Name	Syntax	Example
Head		
Tail		
Cut		
Paste		
Sort		

5) Write the syntax and execute the following commands.

Command Name	Syntax	Example
Umount		
Df		
Du		
Fdisk		
Su		

PART – B

1. Write a shell script to display current date, time, username and directory.
2. Write script to determine whether given file exists or not, file name is supplied as command line argument, also check for sufficient number of command line argument
3. Write shell script to show various system configuration like:
 - a) Currently logged user name and his long name
 - b) Current shell
 - c) Your home directory
 - d) Your operating system type
4. Write shell script to show various system configuration like:
 - a) Your current path setting
 - b) Your current working directory
 - c) Show all available shells
5. Write a Shell script to accept any two file names and check their file permissions.
6. Write a C-program to fork a child process and execute the given Linux commands.
7. Write a shell script to print current month calendar and to replace the current day number by '*' or '**' respectively.
8. Write a C-program to fork a child process and execute the given Linux commands.
9. Write a C-program to fork a child process, print owner process ID and its parent process ID.
10. Write a C-program to prompt the user for the name of the environment variable, check its validity and print an appropriate message.



4ನೇ ಸೆಮಿಸ್ಟರ್-ಕನ್ನಡ ಕಲಿ-2 (ಕನ್ನಡೇತರರಿಗೆ ಕನ್ನಡ ಪರಿಚಯ)

4th Semester	Course: Kannada Kali-2	Course Code:15KA4NT (2016-17)
	No. of Credits:02	No. of teaching hours/week:02 No. of teaching hours/Semester:26
	Mode of Assessment and Evaluation: Semester End Examination (SEE) only. No CIE.	Maximum Marks: 50 (SEE only) Minimum Passing marks:20

ಉದ್ದೇಶ:

1. ಕೇಳುವುದು, ಗ್ರಹಿಸುವುದು, ನಿರರ್ಗಳವಾಗಿ ಮತ್ತು ಸ್ಪಷ್ಟವಾಗಿ ಓದುವ ಮತ್ತು ಮಾತನಾಡುವ (ಅಭಿವ್ಯಕ್ತಿಸುವ) ಸಾಮರ್ಥ್ಯವನ್ನು ಬೆಳೆಸುವುದು.
2. ಜ್ಞಾನಾರ್ಜನೆ, ಸಾಹಿತ್ಯಾಭಿರುಚಿ, ಚಿಂತನೆ ಮತ್ತು ಆನಂದಕ್ಕಾಗಿ ಸ್ವತಂತ್ರವಾಗಿ ಓದಲು, ಬರೆಯಲು ಮತ್ತು ಮಾತನಾಡಲು ಸಮರ್ಥರಾಗುವಂತೆ ಮಾಡುವುದು.
3. ಪದ ಸಂಪತ್ತನ್ನು ಹೆಚ್ಚಿಸಿಕೊಂಡು ಸ್ಪಷ್ಟ ಉಚ್ಚಾರಣೆಯೊಡನೆ ಲಿಖಿತ ಮತ್ತು ಮೌಖಿಕ ಚಟುವಟಿಕೆಗಳನ್ನು ಮಾಡಿಸಿ, ಸ್ವತಂತ್ರವಾಗಿ ಭಾಷೆಯ ಬಳಕೆ ಮಾಡುವುದು.
4. ನಾಡು-ನುಡಿ, ಸಂಸ್ಕೃತಿ ಮತ್ತು ಸಾಹಿತ್ಯಗಳ ಪರಿಚಯ ಮತ್ತು ಆತ್ಮೀಯ ಭಾವಾಭಿಮಾನವನ್ನು ಬೆಳೆಸುವುದು.
5. ಕ್ರಿಯಾತ್ಮಕ ಚಟುವಟಿಕೆಗಳಿಂದ ಭಾಷಾ ಕೌಶಲ್ಯದ ಸರಳ ಪ್ರಯೋಗ ಮಾಡಿಸುವುದು./ಕಲಿಸುವುದು.
(ಕ್ರಿಯಾತ್ಮಕ ಚಟುವಟಿಕೆ ಎಂದರೆ, ವರ್ಣಮಾಲೆ ಪರಿಚಯ, ವ್ಯಾಕರಣದ ಸರಳ ಪರಿಚಯ, ಗುಣಿತಾಕ್ಷರ, ಸಂಯುಕ್ತಾಕ್ಷರಗಳು, ನಾಮಪದ, ಲಿಂಗ, ವಚನ, ಪ್ರತ್ಯಯಗಳು, ವಾಕ್ಯರಚನೆ (ಕತ್ಯ, ಕರ್ಮ, ಕ್ರಿಯಾಪದ) ಇತ್ಯಾದಿ).

Course outcome:

1. Developing listening and speaking skills.
2. Easy Interaction with peers.
3. Students can use the language at ease in daily life situations

ಪಠ್ಯಕ್ರಮ ಮತ್ತು ಸರಳ ಭಾಷಾ ಕೌಶಲ್ಯ

(ಕನ್ನಡ ಕಲಿ-ಪಠ್ಯಪುಸ್ತಕ -ಶ್ರೀ ಲಿಂಗದೇವರು ಹಳೇಮನೆ - ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ ಪ್ರಕಾಶನ)

ಭಾಗ-2

ಪಾಠಗಳ ಕ್ರಮಾಂಕ Lesson No	ಪಠ್ಯವಸ್ತುವಿನ ವಿವರ - Curriculum Content	ಸೆಮಿಸ್ಟರ್ ಬೋಧನ ಆವಧಿ Total no.of Classes /Sem
Part-I		
11	Plan to go for a movie. Comparative, non-past tense, instrumental and ablative case	02
12	Conversation between Doctor & Patient. Potential forms, accusative case.	02
13	Enquiring about friend's family	02

	Past tense -d, and -t- and -id-, negation.	
14	Conversation between friends - Past tense -k - T - D and -id-v negation verbal noun	02
15	Routine activities of a Student.	01
16	About children's education. Continuous, Perfect tenses and negations.	02
17	Halebidu - Belur Relative participle, negation and Participle nouns.	02
18	Discussing about Examination and future plan-conditional and negative conditions.	03
19	Karnataka (Lesson for reading) (reading skill)	03
20	bEku bEDagaLu (Lesson for reading (Reading skill)	03
Part-II	Kannada Scripts	03
	ECA-word/sentence formation/letter/small essay writing	01
ಒಟ್ಟು ಗಂಟೆಗಳು		26

ಸೂಚನೆಗಳು:

- ಮೇಲಿನ ಪಾಠಗಳ ಪುನರಾವರ್ತಿತ ಭಾಗಗಳಿಗೆ ಬದಲಾಗಿ “ಕ್ರಿಯಾತ್ಮಕ ಚಟುವಟಿಕೆ”ಯಿಂದ ಗಳಿಸುವ ಅಕ್ಷರ ಜ್ಞಾನ ದಿಂದ ಪದ ಸಂಪತ್ತು ಹೆಚ್ಚಿಸಿ, ಪದಗಳಿಂದ ಸ್ವಂತ ವಾಕ್ಯಗಳ ರಚನೆ ಮಾಡಿಸುವುದು. (ಅಮ್ಮ, ಮೊಬೈಲ್, ಕನ್ನಡ ಭಾಷೆ, ಕವಿಗಳು, ನಾಟಕ, ಜನಪದ ಕಲೆ, ನಾಡಿನ ಪ್ರಸಿದ್ಧ ವ್ಯಕ್ತಿಗಳು, ಸಹೋದರ, ಸ್ನೇಹಿತ, ತರಕಾರಿ, ದೋಸೆ, ತಿಂಡಿ, ನಿಂದೆ, ಬಿಸಿ, ಚಳಿ, ಆಕಾಶ, ಓದು, ಇತ್ಯಾದಿ ನಿತ್ಯ ಬಳಕೆಯ ಸರಳ ಪದಗಳಿಂದ ವಾಕ್ಯರಚನೆ ಮತ್ತು 25-50 ಪದಗಳ ಕಿರು ಪ್ರಬಂಧ ರೂಪದ ಲೇಖನ ರಚನೆ).
- ಸಂಸ್ಥೆಯ ಪ್ರಾಚಾರ್ಯರಿಗೆ ವಿದ್ಯಾರ್ಥಿಯ ಮನವಿ ಪತ್ರ, ಕುಂದುಕೊರತೆಗಳ ಬಗ್ಗೆ ಸಂಬಂಧಿಸಿದವರಿಗೆ ಪತ್ರ, ಸ್ನೇಹಿತರಿಗೆ ಪತ್ರಗಳು, ಸರಳವಾಗಿ ಯಾವುದೇ ಸಾಮಾನ್ಯ ವಿಷಯಗಳ ಬಗ್ಗೆ ಪತ್ರಲೇಖನ. (6-10 ವಾಕ್ಯಗಳು).

ಆಕರ ಗ್ರಂಥಗಳು:

1. ಕನ್ನಡ ಕಲಿ-ಶ್ರೀ ಲಿಂಗದೇವರು ಹಳೇಮನೆ - ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.
2. ಪ್ರಾಥಮಿಕ ಶಾಲೆಯ ಕನ್ನಡ ಪಠ್ಯಪುಸ್ತಕಗಳು
3. ಸರಳ ಕನ್ನಡ ವ್ಯಾಕರಣ ಪುಸ್ತಕಗಳು- ಎಂ.ವಿ ನಾಗರಾಜರಾವ್/ಇತರೆ ಲೇಖಕರು.
4. ಪ್ರಯೋಗ ಪ್ರಣತಿ-ಪ್ರಥಮ ಪಿಯುಸಿ ಪೂರಕ ಪಠ್ಯ.
5. ಸರಳ ಪತ್ರವ್ಯವಹಾರದ ಪುಸ್ತಕಗಳು

ಡಿಪ್ಲೋಮಾ 4ನೇ ಸೆಮಿಸ್ಟರ್-ಕನ್ನಡ ಕಲಿ-2 (ಕನ್ನಡೇತರರಿಗೆ ಕನ್ನಡ ಪರಿಚಯ)

ಸೆಮಿಸ್ಟರ್ ಅಂತಿಮ ಲಿಖಿತ ಪರೀಕ್ಷೆ

ಸಮಯ: 2 ಗಂಟೆಗಳು

ಗರಿಷ್ಠ ಅಂಕಗಳು:50

1. Fill in the blanks using the appropriate words.
2. Rewrite as directed.
3. Combine the following sentences.
4. Translate into Kannada.
5. Answer the following questions.
6. Fill in the blanks using the correct past tense forms of the verbs giving in the bracket.

7. Transform into negative.
8. Substitute and complete the sentence
9. Vocabulary (meanings of words) using formation of sentences (any five).
10. Questions from lessons 17 to 19. (Out of 6 questions, answer any 3 questions).
11. Scripts- consonants form- +vowel (10 types)
12. Conversation & other questions. (KK-Exercises)

ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ:

ಡಿಪ್ಲೋಮಾ 4ನೇ ಸೆಮಿಸ್ಟರ್-ಕನ್ನಡ ಕಲಿ-2 (ಕನ್ನಡೇತರರಿಗೆ ಕನ್ನಡ ಪರಿಚಯ)

ಸೆಮಿಸ್ಟರ್ ಅಂತಿಮ ಲಿಖಿತ ಪರೀಕ್ಷೆ

ಸಮಯ: 2 ಗಂಟೆಗಳು

ಗರಿಷ್ಠ ಅಂಕಗಳು:50

- I. (a) Fill in the blank using the correct past tense forms of the verbs given in the bracket. 3+2 =05

1. ಅವರು ನಿನ್ನೆ ಊರಿನಿಂದ (ಬಾ)
2. ಅವಳು ಒಂದು ಹೆಣ್ಣು ಮಗು (ಹೆರು)
3. ನಾನು ನಿನಗಾಗಿ ತುಂಬಾ ಹೊತ್ತು..... (ಕಾಯು)

- (b) Fill in the blank using the correct verbal participle forms of the verbs given in the bracket.

1. ಆ ಹುಡುಗಿ ಮನೆ ಹೋದಳು. (ಬಿಡು)
2. ಅವನು ಇವತ್ತೆ ಊರಿನಿಂದ.....ನಾಳೆ ಬರುತ್ತಾನೆ. (ಹೊರಡು)

- II. Give the negative forms of the following sentence. (Any Five) 1X5=05

- ಅ) ನೀವು ಪುಸ್ತಕ ಕೊಡಿ.
- ಆ) ನೀವು ಸಿಗರೇಟ್ ಸೇದಬಹುದು.
- ಇ) ಅವರು ನನಗೆ ಚೆನ್ನಾಗಿ ಗೊತ್ತು.
- ಈ) ಅವರು ಕನ್ನಡ ಚೆನ್ನಾಗಿ ಕಲಿತರು.
- ಉ) ಅವಳು ತಲೆ ಬಾಚಿಕೊಂಡು ಬಂದಳು.
- ಊ) ಅವನಿಗೆ ಫೋನ್ ಬಂದಿದೆ.
- ಋ) ರವಿ ಮನೆಯಲ್ಲಿ ಮಲಗಿರ್ತಾನೆ.

- III. Translate into KANNADA. (Any Five)

2X5=10

- 1) Who will come with you?
- 2) Today Ms. Kamala will go to her native place.
- 3) You must drink butter milk daily.
- 4) Please, don't talk to me.

- 5) How much advance money did you pay for the hostel?
- 6) How many of you are learning Kannada seriously?
- 7) If I get good marks in diploma, I will get admission for BE program.
- 8) At what time today you will be available in the hostel?.

IV. Vocabulary.

(a) Write English equivalents of the Kannada words. (Any five) 1X5=05

1. ಆಗಸ 2. ಶೈಲಿ 3. ಅನುಮಾನ 4.ಪರೀಕ್ಷೆ 5.ಜಾತಿ 6.ನೈಸರ್ಗಿಕ 7.ಮತ 8. ವಾಣಿಜ್ಯ

(b) Write Kannada equivalents of the English words. (Any five) 1X5=05

1. Wealth 2. Religion 3. Memory 4.fear 5.Environment 6. Primary 7. Mistakes 8. Tall

VI. Conversation:

ಈ ಕೆಳಗಿನ ಅಪೂರ್ಣ ಸಂಭಾಷಣೆಯನ್ನು ಆವರಣದಲ್ಲಿ (bracket) ನೀಡಿರುವ ಪದಗಳನ್ನು ಅರ್ಥಮಾಡಿಕೊಂಡು ಪೂರ್ತಿ ಮಾಡಿ. -05

ರಾಜು: ನಿನಗೆ ನಿನ್ನೆ ಮೋಹನ್ ಸಿಕ್ಕನಾ?

ರಾಮು: negative) ನಿನಗೆ ಸಿಕ್ಕನಾ?

ರಾಜು (Positive) ಹೌದು, ನಿಮ್ಮನ್ನು ನೋಡುವುದಕ್ಕೆ ಹೋಗುತ್ತೀನಿ ಅಂತ ಹೇಳಿದ.

ರಾಮು: (Enquiring about meeting him)

ರಾಜು: ಅವನು ಕೆಲಸ ಬಿಟ್ಟನಂತೆ.

ರಾಮು: (Questioning)

ರಾಜು:(Answer).

VII.Transform the following sentences as per direction. (Any Five) 1X5=05

1. ಮಕ್ಕಳು ರಸ್ತೆಯಲ್ಲಿ ಆಟ ಆಡುತ್ತಾ (into present continuous) ಇದ್ದವು.
2. ಹುಡುಗರು ತರಗತಿಯಲ್ಲಿ ಸುಮ್ಮನೆ (into present continuous) ನಗುತ್ತಾ ಇದ್ದರು.
3. ಆ ಹೆಂಗಸರು ಜಗಳ ಆಡುತ್ತಾ ಇದ್ದಾರೆ. (into past continuous)
4. ತರಕಾರಿ ಕಡಿಮೆ ಬೆಲೆಗೆ ಸಿಗುತ್ತಾ ಇದೆ. (into past continuous)
5. ಅವನು ದಿನಾ ಇಲ್ಲಿಗೆ ಬರ್ತಾನೆ. (into habitual)
6. ಇಲ್ಲಿ ಬಸ್ಸುಗಳು ತುಂಬಾ ಓಡುತ್ತಾ ಇವೆ. (into habitual)
7. ಆಂಧ್ರಪ್ರದೇಶದಿಂದ ಬಂದಿದ್ದ ವಿದ್ಯಾರ್ಥಿಗಳು ಎಲ್ಲಿದ್ದಾರೆ?(into present perfect)

VIII.Write the Kannada alphabet in the traditional order. 05

OR

ಹಳೇಬೀಡು ಬೇಲೂರಿನಿಂದ ಎಷ್ಟು ದೂರದಲ್ಲಿದೆ ಮತ್ತು ಯಾವ ಜಿಲ್ಲೆಯಲ್ಲಿದೆ? ಇಲ್ಲಿನ ದೇವಸ್ಥಾನಗಳ ಹೆಸರುಗಳು ಏನು ಮತ್ತು ಅವುಗಳನ್ನು ಕಟ್ಟಿಸಿದವರು ಯಾರು?

IX. Combine the following: (Any One) 1X1=01

(A) 1) ಮನೆ + ಇಂದ =

2) ಮ್ + ಔ =

(B) Combine the following sentence using verbal participle form. (Any One) 1X1=01

ಅ) ಹುಡುಗರು ದುಡ್ಡು ಕೊಟ್ಟರು.

ಹುಡುಗರು ಸರ್ಕಸ್ ನೋಡಿದರು.

ಆ) ನಾನು ಕೆಲಸ ಮಾಡ್ತಾ ಇದ್ದೆ.

ನಾನು ಎಂ.ಎ. ಓದಿದೆ.

(B) Frame meaningful small sentences with using words given below:(Any Three) -1X3=03.

ಅ) ಮರ ಆ) ಫಲ ಇ) ಊರು ಈ) ಪೇಪರ್ ಉ) ಇವರು ಊ) ಮನೆ ಎ) ಶಾಲೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ ರಚನಾ ಸಮಿತಿ

• ಸಂಪಾದಕೀಯ ಸಮಿತಿ:

1. ಶ್ರೀ ಟಿ ಎಲ್ ರವೀಂದ್ರ, ಉಪನ್ಯಾಸಕರು, ಸರ್ಕಾರಿ ಜಿ.ಆರ್.ಐ.ಸಿ.ಪಿ ಬೆಂಗಳೂರು.
2. ಶ್ರೀ ಟಿ. ತಿಮ್ಮಪ್ಪ, ಉಪನ್ಯಾಸಕರು(ಆಯ್ಕೆ ಶ್ರೇಣಿ), ಯಾಂತ್ರಿಕ ವಿಭಾಗ, ಸರ್ಕಾರಿ ಪಾಲಿಟೆಕ್ನಿಕ್, ತುಮಕೂರು.

• ಸಲಹಾ ಸಮಿತಿಯ ಬಾಹ್ಯ ಸಂಪನ್ಮೂಲ ವ್ಯಕ್ತಿಗಳು.

1. ಪ್ರೊ. (ಡಾ.) ಡಿ. ಪಾಂಡುರಂಗ ಬಾಬು, ಕುಲಸಚಿವರು, ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.
2. ಪ್ರೊ. (ಡಾ.) ಅಶೋಕ್ ಕುಮಾರ್ ರಂಜರೆ, ಪ್ರಾಧ್ಯಾಪಕರು, ಪ್ರಸಾರಾಂಗ ವಿಭಾಗ, ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.
3. ಪ್ರೊ. (ಡಾ.) ಕೆ ವೈ ನಾರಾಯಣ ಸ್ವಾಮಿ, ಸಹ ಪ್ರಾಧ್ಯಾಪಕರು, ಸ್ನಾತಕೋತ್ತರ ವಿಭಾಗ, ಸರ್ಕಾರಿ ಕಲಾ ಕಾಲೇಜು, ಬೆಂಗಳೂರು.
4. ಪ್ರೊ. (ಡಾ.) ಜೆ ಬಾಲಕೃಷ್ಣ, ಪ್ರಾಧ್ಯಾಪಕರು ಹಾಗೂ ಮುಖ್ಯಸ್ಥರು, ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ವಿಭಾಗ, ಕೃಷಿ ವಿಶ್ವವಿದ್ಯಾಲಯ, (ಜಿಕೆವಿಕೆ) ಹೆಬ್ಬಾಳ, ಬೆಂಗಳೂರು.

KARNATAKA STATE BOARD OF TECHNICAL EXAMINATION, BENGALURU.															
TEACHING AND EXAMINATION SCHEME FOR KANNADA COURSE IN DIPLOMA PROGRAMME															
SEMESTER: III											COMMON TO ALL DIPLOMA PROGRAMMES			C-15 Curriculum	
SL.NO	COURSE NAME	Teaching Department	COURSE /QP CODE	Teaching scheme					Examination scheme						
				Contact hours					Exam paper duration in Hrs	End exam		Maximum CIE Marks (IA+SA)	Minimum Marks for passing. (IA + SA)		
TH	TU	PR	TOTAL	Credit	Max marks	Min marks									
	THEORY														
1	KANNADA KALI-1	KA	15KA3NT	2	-	-	2	2	-	-	-	50	20		
2	TANTRIKA KANNADA -1	KA	15KA3KT	2	-	-	2	2	-	-	-	50	20		

CIE- Continuous Internal Examination: SEE-Semester End Examination: IA-Internal Assessment Tests: SA- Student Activity.

- Note: 1. Candidates studied Kannada as one subject in 10th standard shall take Tantrika Kannada 1 & 2. Others may take "Kannada Kali-1&2".
2. In 3rd Semester- Assessment is only by CIE and no SEE. Average marks of three IA tests shall be rounded off to the next higher digit. Rubrics to be devised appropriately to assess student activity.

KARNATAKA STATE BOARD OF TECHNICAL EXAMINATION, BENGALURU.															
TEACHING AND EXAMINATION SCHEME FOR KANNADA COURSE IN DIPLOMA PROGRAMME															
SEMESTER: IV											COMMON TO ALL DIPLOMA PROGRAMMES			C-15 Curriculum	
SL.NO	COURSE NAME	Teaching Department	COURSE /QP CODE	Teaching scheme					Examination scheme						
				Contact hours					Exam paper duration in Hrs	Sem End Exam		Maximum CIE Marks (IA+SA)	Minimum Marks for passing. (IA + SA)		
TH	TU	PR	TOTAL	Credit	Max Exam Marks	Min Passing Marks									
	THEORY														
1	KANNADA KALI-2	KA	15KA4NT	2	-	-	2	2	2	50	20	-	-		
2	TANTRIKA KANNADA -2	KA	15KA4KT	2	-	-	2	2	2	50	20	-	-		

CIE- Continuous Internal Examination: SEE-Semester End Examination: IA-Internal Assessment Tests: SA- Student Activity.

- Note: In 4th Semester- Assessment is only by SEE and no CIE. To award diploma certificate, passing in Kannada course is mandatory. However Kannada course is not included in the eligibility criteria for promotion to the higher semester.

ಡಿಪ್ಲೋಮಾ-ತಾಂತ್ರಿಕ ಕನ್ನಡ-2 (ಕನ್ನಡ ಬಲ್ಲವರಿಗಾಗಿ)

4ನೇ ಸೆಮಿಸ್ಟರ್ - ತಾಂತ್ರಿಕ ಕನ್ನಡ -2 (ಸಾಹಿತ್ಯ ಮತ್ತು ಭಾಷಾ ಕೌಶಲ್ಯ ಪ್ರಯೋಗ)
ಪಠ್ಯಕ್ರಮ

4th Semester	Course: ತಾಂತ್ರಿಕ ಕನ್ನಡ -2	Course Code: 15KA4KT (2016-17)
	No. of Credits: 02	No. of teaching hours/week: 02 No. of teaching hours/Semester:26
	Mode of Assessment and Evaluation: Semester End Examination (SEE)only. No CIE.	Maximum Marks: 50 (SEE only) Minimum Passing marks: 20

ಪಠ್ಯ ಪ್ರಕಾರ	ಪಾಠ	ಪಠ್ಯದ ಹೆಸರು/ಲೇಖಕರು/ಪ್ರಕಟಣೆ	ಸೆಮಿಸ್ಟರ್ ಬೋಧನಾವಧಿ ಗಂಟೆಗಳು
ಕಾವ್ಯ ಮಂಜರಿ-(ಬದುಕು ಮತ್ತು ಮಾನವತೆ)	1	(ಕಾವ್ಯ ಗುಚ್ಛಗಳು) (1) ನನ್ನ ಹಣತೆ-ಡಾ:ಬಿ.ಎಸ್.ಎಸ್. (2) ಮಂಕು ತಿಮ್ಮನ ಕಗ್ಗ-ಡಿ.ವಿ.ಬಿ	02
ಸಂಸ್ಕೃತಿ	2	ಅಲೆಕ್ಸಾಂಡರ್‌ನ ಗುರುದಕ್ಷಿಣೆ-ಮಾಸ್ತಿ ವೆಂಕಟೇಶ ಅಯ್ಯಂಗಾರ್	02
ಪರಿಸರ/ಸಾಹಸ	3	ವೈನಾಡಿನ ನರಭಕ್ಷಕರು - ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ	02
ಕ್ರೀಡೆ/ಕಲೆ	4	ಬಿ.ಆರ್.ವಿಶ್ವನಾಥ್-ಡಾ: ಕೆ.ಪುಟ್ಟಸ್ವಾಮಿ	02
ತಂತ್ರಜ್ಞಾನ	5	ಮಾಹಿತಿ ತಂತ್ರಜ್ಞಾನ-ಒಂದು ಸ್ಥೂಲ ನೋಟ-ಬಿ.ಎನ್.ನರಸಿಂಹಮೂರ್ತಿ	02
ಯಶೋಗಾಥೆ/ವ್ಯಕ್ತಿಚಿತ್ರಣ	6	ಡಾ:ವಿಶ್ವೇಶ್ವರಯ್ಯ-ವ್ಯಕ್ತಿ ಮತ್ತು ಐತಿಹ್ಯ - ಎ.ಎನ್.ಮೂರ್ತಿರಾವ್	02
ಭಾಷಾ ಕೌಶಲ್ಯ- ಚಟುವಟಿಕೆಗಳು	7	ಲಿಖಿತ ಅಭಿವ್ಯಕ್ತಿ: ಪತ್ರಗಳ ರಚನೆ-ವ್ಯಾಖ್ಯೆ: ಪತ್ರದ ಭಾಷೆ, ಶೈಲಿ, ನಮೂನೆಗಳು (1) ವೈಯಕ್ತಿಕ ಪತ್ರ (ಪ್ರವಾಸ/ಕೋರಿಕೆ.(ಮನವಿ/ಆತ್ಮಿಯರಿಗೆ ಬರೆಯುವ ಪತ್ರಗಳು)..) (2) ಪತ್ರ ವ್ಯವಹಾರ (ವಾಣಿಜ್ಯ ಸಂಸ್ಥೆಗಳಿಗೆ ಬರೆಯುವ/ಪ್ರತ್ಯುತ್ತರ ಪಡೆಯುವ, ಬ್ಯಾಂಕ್‌ಗಳಿಗೆ/ಸರ್ಕಾರಿ ಕಚೇರಿಗಳಿಗೆ ಬರೆಯುವ ಪತ್ರಗಳು....)-ಮಾದರಿಗಳು (3) ಅಭ್ಯರ್ಥನ ಪತ್ರ (ಹುದ್ದೆಗೆ ಅರ್ಜಿ) -1-2 ನಮೂನೆಗಳು-4-5 ಪ್ರಶ್ನೆಗಳು (4) ಓದುಗರ ವಿಭಾಗಕ್ಕೆ ಪತ್ರಿಕಾ ಸಂಪಾದಕರಿಗೆ ಬರೆಯುವ ಪತ್ರಗಳು 1 ನಮೂನೆ-3-4 ವಿಷಯಗಳ ಮೇಲೆ ಪತ್ರ ಬರೆಯುವುದು.	06
	8	ಸಂಕ್ಷಿಪ್ತ ಲೇಖನ (ಸಾರಾಂಶ ಲೇಖನ)	02
	9	ಮೌಖಿಕ ಅಭಿವ್ಯಕ್ತಿ> ಚರ್ಚಾ ಸ್ಪರ್ಧೆ/ಕೂಟ-ಭಾಷಣ-ಆಶುಭಾಷಣ -ಕಾರ್ಯಕ್ರಮ ನಿರೂಪಣೆ ಮಾಡುವುದು.	06
		ಒಟ್ಟು ಅವಧಿ	26 ಗಂಟೆಗಳು

ಡಿಪ್ಲೋಮಾ 4ನೇ ಸೆಮಿಸ್ಟರ್ (ಕನ್ನಡಬಲ್ಲ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ)
ತಾಂತ್ರಿಕ ಕನ್ನಡ-2

ಪರಿವಿಡಿ

ಭಾಗ-1

ಕಾವ್ಯ ಗುಚ್ಛ

1. ನನ್ನ ಹಣತೆ-ಡಾ:ಜಿ.ಎಸ್.ಶಿವರುದ್ರಪ್ಪ
2. ಮಂಕುತಿಮ್ಮನ ಕಗ್ಗ-ಡಿವಿಜಿ

ಗದ್ಯ ಸಾಹಿತ್ಯ

3. ಅಲೆಕ್ಸಾಂಡರನ ಗುರುದಕ್ಷಿಣೆ (ಸಂಸ್ಕೃತಿ-ಕತೆ)-ಶ್ರೀನಿವಾಸ (ಮಾಸ್ತಿ)
4. ವೈನಾಡಿನ ನರಭಕ್ಷಕರು (ಪರಿಸರ-ಸಾಹಸ)-ಕೆ.ಪಿ.ಪೂ.ತೇಜಸ್ವಿ
5. ಲಿಟ್ಟಲ್ ಮಾಸ್ಟರ್ (ಕ್ರೀಡೆ/ಕಲೆ)-ಡಾ.ಕೆ.ಪುಟ್ಟಸ್ವಾಮಿ
6. ಮಾಹಿತಿ ತಂತ್ರಜ್ಞಾನ-ಜಿ.ಎನ್.ನರಸಿಂಹಮೂರ್ತಿ
7. ಡಾ:ವಿಶ್ವೇಶ್ವರಯ್ಯ-ವ್ಯಕ್ತಿ ಮತ್ತು ಐತಿಹ್ಯ-ಎ.ಎನ್.ಮೂರ್ತಿರಾವ್

ಭಾಗ-2 -ಭಾಷಾ ಕೌಶಲ್ಯ ಚಟುವಟಿಕೆಗಳು

(1)ಬರಹ ರೂಪದ ಸಂವಹನ ಕನ್ನಡ-ಅಭಿವ್ಯಕ್ತಿಯ ಸ್ವರೂಪ
ಔಪಚಾರಿಕ ಮತ್ತು ಅನೌಪಚಾರಿಕ ಪತ್ರಗಳು

- (ಅ) ಪತ್ರವ್ಯವಹಾರ-ವ್ಯಾಖ್ಯೆ-ವಿವರಣೆ
- (ಆ) ಪತ್ರಗಳ ಮಾದರಿಗಳು

1. ವಾಣಿಜ್ಯ ಪತ್ರಗಳು-ವ್ಯಾಖ್ಯೆ, ಕೆಲವು ವಿಧಗಳು
2. ಖಾಸಗಿ/ವೈಯಕ್ತಿಕ ಪತ್ರಗಳು
3. ಪತ್ರಿಕೆಗಳಿಗೆ ಬರೆಯುವ (ಓದುಗರ)ಪತ್ರಗಳು
4. ಅಭ್ಯರ್ಥನ ಪತ್ರಗಳು

(2) ಸಾರಾಂಶ ಲೇಖನ: ವ್ಯಾಖ್ಯೆ, ಉದ್ದೇಶ, ವಿಧಾನಗಳು.

3 . ಮೌಖಿಕ ಅಭಿವ್ಯಕ್ತಿ ಚಟುವಟಿಕೆಗಳು(ತರಗತಿ ಚಟುವಟಿಕೆಗಳು)

1. ವಿಷಯಾತ್ಮಕ ಭಾಷಣಗಳು
2. ಆಶುಭಾಷಣ (ರಚನಾತ್ಮಕ ವಿಷಯಗಳು)
3. ಚರ್ಚೆ (ವಿಚಾರ ವಿನಿಮಯ/ಪರ-ವಿರುದ್ಧ ವಾದ ಮಂಡನೆ)
4. ನಿರೂಪಣೆ

Course outcome:

1. Developing listening and speaking skills.
2. Easy Interaction with peers.
3. Students can use the language at ease in daily life situations

ಡಿಪ್ಲೋಮಾ ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್ (ಕನ್ನಡ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ)

ತಾಂತ್ರಿಕ ಕನ್ನಡ-2

ಸಮಯ: 2.00 ಗಂಟೆ

ಅಂಕಗಳು: 50

I. ಕೆಳಗಿನ ಯಾವುದೇ ಐದು ಪ್ರಶ್ನೆಗಳಿಗೆ 1-2 ಪೂರ್ಣ ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 1X5=05

- (1) ಮಾಹಿತಿ ತಂತ್ರಜ್ಞಾನದ ಮಾಹಿತಿಯನ್ನು ನಷ್ಟಗೊಳಿಸುವ ಅನಿಷ್ಟ ಯಾವುದು?
- (2) ದಿವಾನ್ ಪದವಿ ಬಂದಾಗ ಸರ್.ಎಂ.ವಿಶ್ವೇಶ್ವರಯ್ಯನವರು ತಮ್ಮ ತಾಯಿಗೆ ಹೇಳಿದ ಮಾತೇನು?
- (3) ಅರಿಸ್ಟಾಟಲ್ ಯಾರು ಮತ್ತು ಅವರು ಅಲೆಕ್ಸಾಂಡರನಿಗೆ ಏನಾಗಬೇಕು?
- (4) ಸುತ್ತೋಲೆ ಅಥವಾ ಪರಿಪತ್ರ ಎಂದರೇನು?
- (5) ಫಿನಿಕ್ಸ್ ಎಂದರೇನು?
- (6) 'ಖೆಡ್ಡಾ' ಎಂದರೇನು?
- (7) ನಿರೂಪಕರೆಂದರೆ ಯಾರು?

II. ಕೆಳಗಿನ ಯಾವುದೇ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಸಂಕ್ಷಿಪ್ತವಾಗಿ ಉತ್ತರಿಸಿ. 5X3=15

- (1) ಕವಿ "ಹಣತೆ ಹಚ್ಚುತ್ತೇನೆ ನಾನು" ಎಂದು ಏಕೆ ಹೇಳುತ್ತಾರೆ?
- (2) ಕ್ಲಿಯಾಂತ್ಸನ ಸಾವು
- (3) ಕಾಕನಕೋಟೆ ಕಾಡು ಹೇಗಿದೆ?
- (4) ಅಂತರಜಾಲದ ಉಪಯೋಗಗಳು.
- (5) ಅನೌಪಚಾರಿಕ ಅಭಿವ್ಯಕ್ತಿ ಎಂದರೇನು ತಿಳಿಸಿ.
- (6) ಚರ್ಚೆ - ವ್ಯಾಖ್ಯೆ ಮತ್ತು ಉಪಯೋಗದ ಬಗ್ಗೆ ಬರೆಯಿರಿ.

III. ಈ ಕೆಳಗಿನ ಯಾವುದೇ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ವಿವರಣಾತ್ಮಕ ಉತ್ತರ ಬರೆಯಿರಿ. 10X3=30

(ಅ) ಹುಲ್ಲಾಗು ಬೆಟ್ಟದಡಿ..... ಕಗ್ಗದಲ್ಲಿ ಮನುಷ್ಯ ಏನಾಗಬೇಕೆಂದು ಮತ್ತು ಸಂಗೀತ ಕಲೆಯೊಂದು ಸಾಹಿತ್ಯ ಕಲೆಯೊಂದು...." ಕಗ್ಗದಲ್ಲಿ ಕವಿ ಇವೆಲ್ಲ ಮನುಷ್ಯನಿಗೆ ಏಕೆ ಬೇಕೆಂದು ಹೇಳುತ್ತಾರೆ?

(ಆ) ಅಣ್ಣನನ್ನು ಕಾಪಾಡಲು ಯೇಗ ಮಾಡಿದ ಸಾಹಸವನ್ನು ವಿವರಿಸಿ.

(ಅಥವಾ)

ಅತಿಯಾದ ನಗರೀಕರಣಕ್ಕಾಗಿ ಕಾಡುಗಳ ನಾಶದಿಂದ ಪರಿಸರದ ಮೇಲಾಗುವ ಪರಿಣಾಮಗಳ ಬಗ್ಗೆ ಬರೆಯಿರಿ.

(ಇ) ನೀವು ಕಾಲೇಜಿನಿಂದ ಹೋಗಿಬಂದ ಪ್ರವಾಸದ ಅನುಭವ ಕುರಿತು ನಿಮ್ಮ ಗೆಳೆಯರಿಗೆ ಪತ್ರ ಬರೆಯಿರಿ.

(ಈ) ಕೆಳಗಿನ ವಿಷಯವನ್ನು ಒಂದು ಸೂಕ್ತ ಶೀರ್ಷಿಕೆ ಸಹಿತ 30 ಪದಗಳ ಮಿತಿಯಲ್ಲಿ ಸಂಕ್ಷೇಪಗೊಳಿಸಿ.

ನೀಲಾಂಬರ ದ್ವೀಪ. ಇದೊಂದು ಸುಂದರ ದ್ವೀಪ. ಪ್ರವಾಸಿಗಳಿಗೆ ಸ್ವರ್ಗಸಮಾನ ದ್ವೀಪ. ಈ ದ್ವೀಪ ಹಿಂದೂ ಮಹಾಸಾಗರದ ದಕ್ಷಿಣಕ್ಕಿರುವ ಆರು ದ್ವೀಪ ಸಮೂಹದಲ್ಲಿ ಮಧ್ಯದಲ್ಲಿ ಹುಣ್ಣಿಮೆ ಚಂದ್ರನಂತೆ ಕಂಗೊಳಿಸುತ್ತಿರುವ ದೊಡ್ಡ ದ್ವೀಪ. ಈ ದ್ವೀಪ ಒಂದು ಭಾಗದಲ್ಲಿ ಹಸಿರು ಚಾದರ ಹಾಸಿದಂತೆ ಸಮತಟ್ಟಾದ ಹುಲ್ಲುಗಾವಲು. ಇನ್ನೊಂದು ಪಕ್ಕ ಬಗೆಬಗೆಯ ಹಣ್ಣುಗಳ ಮತ್ತು ಹೂವುಗಳ ಗಿಡಗಳು ಮತ್ತು ಅಡಿಕೆ, ಮಾವು, ಮೆಣಸು, ಏಲಕ್ಕಿ, ಲವಂಗದಂತಹ ಗಿಡ-ಮರಗಳಿಂದ ಕೂಡಿದೆ.ಈ ದ್ವೀಪದ ಮಧ್ಯೆ ಕಿರೀಟದಂತೆ ನಮ್ಮ ಉದಕಮಂಡಲದಂತಿರುವ ಹಸಿರಿನ ಬೆಟ್ಟ, ನಿಸರ್ಗದತ್ತ ಹೂವುಗಳ ಗಿಡಗಳಿಂದ ಪುಷ್ಪೋದ್ಯಾನದಂತಿದೆ. ಪ್ರಕೃತಿಯೇ ನಿರ್ಮಿಸಿರುವ ತಿಳಿನೀರಿನ ಸುಂದರ ಕೊಳ ಈ ಬೆಟ್ಟದ

ಆಕರ್ಷಣೆಯಾಗಿದೆ. ಹೀಗಾಗಿ ಈ ದ್ವಿಪ ಪ್ರವಾಸಿಗರಿಗೆ ಅಪಾರ ಆಕರ್ಷಕ ತಾಣವಾಗಿದೆ. ಇಲ್ಲಿನ ಜನ ಸಹ ಸೌಜನ್ಯಶೀಲರು. ಸೃಷ್ಟಿಯ ಶೃಂಗಾರವನ್ನೆಲ್ಲ ಒಳಗೊಂಡ ಈ ದ್ವಿಪದ ಮುಖ್ಯ ಕಸುಬು ಕೃಷಿ, ತೋಟಗಾರಿಕೆ ಮತ್ತು ಪ್ರವಾಸೋದ್ಯಮವಾಗಿರುವುದರಿಂದ, ಇದೊಂದು ಶ್ರೀಮಂತ ದ್ವಿಪವಾಗಿದೆ.

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ ರಚನಾ ಹಾಗೂ ಪಠ್ಯಪುಸ್ತಕ ಸಮಿತಿ

• ಸಂಪಾದಕೀಯ ಸಮಿತಿ:

1. ಶ್ರೀ ಟಿ ಎಲ್ ರವೀಂದ್ರ, ಉಪನ್ಯಾಸಕರು, ಸರ್ಕಾರಿ ಜಿ.ಆರ್.ಐ.ಸಿ.ಪಿ ಬೆಂಗಳೂರು.
2. ಶ್ರೀ ಟಿ. ತಿಮ್ಮಪ್ಪ, ಉಪನ್ಯಾಸಕರು(ಆಯ್ಕೆ ಶ್ರೇಣಿ), ಯಾಂತ್ರಿಕ ವಿಭಾಗ, ಸರ್ಕಾರಿ ಪಾಲಿಟೆಕ್ನಿಕ್, ತುಮಕೂರು.

• ಸಲಹಾ ಸಮಿತಿಯ ಬಾಹ್ಯ ಸಂಪನ್ಮೂಲ ವ್ಯಕ್ತಿಗಳು.

1. ಪ್ರೊ. (ಡಾ.) ಡಿ. ಪಾಂಡುರಂಗ ಬಾಬು, ಕುಲಸಚಿವರು, ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.
2. ಪ್ರೊ. (ಡಾ.) ಅಶೋಕ್ ಕುಮಾರ್ ರಂಜರೆ, ಪ್ರಾಧ್ಯಾಪಕರು, ಪ್ರಸಾರಾಂಗ ವಿಭಾಗ, ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.
3. ಪ್ರೊ. (ಡಾ.) ಕೆ ವೈ ನಾರಾಯಣ ಸ್ವಾಮಿ, ಸಹ ಪ್ರಾಧ್ಯಾಪಕರು, ಸ್ನಾತಕೋತ್ತರ ವಿಭಾಗ, ಸರ್ಕಾರಿ ಕಲಾ ಕಾಲೇಜು, ಬೆಂಗಳೂರು.
4. ಪ್ರೊ. (ಡಾ.) ಜೆ ಬಾಲಕೃಷ್ಣ, ಪ್ರಾಧ್ಯಾಪಕರು ಹಾಗೂ ಮುಖ್ಯಸ್ಥರು, ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ವಿಭಾಗ, ಕೃಷಿ ವಿಶ್ವವಿದ್ಯಾಲಯ, (ಜಿಕೆವಿಕೆ) ಹೆಬ್ಬಾಳ, ಬೆಂಗಳೂರು.