

7672**Code : 20EC52I**Register
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V Semester Diploma Examination, February/March-2023**IOT****Time : 3 Hours |****| Max. Marks : 100****Instruction :** Answer any **one** full question from each Section.**SECTION - 1**

1. (a) An Intelligent Irrigation system is a way to deal with all of the issues in a conventional approach of agriculture. Explain the ways in which IOT is implemented for reformation in Agriculture. 10
- (b) Even though there is a reduction in number of air travellers due to pandemic, IATA forecast predicts 8.2 billion Air travellers in 2037. To handle this exponential growth in the number of passengers in coming years, airlines require the powerful capabilities of Airport digitisation. Discuss the role of IOT solutions in this regard. 10

2. (a) Tata Motors Limited manufacture four wheel passenger vehicles using traditional techniques. The company is planning for transforming into Smart factories. Recommend various technologies required for this transformation. 10
- (b) BYJU's Education start up company provides online training and tuition from class 1 to class 12 students in India. The company stores its data in another company's server located at Mumbai because of infrastructure constraints. Company wants to enter into Europe and North America to provide global services. What should company adopt to make itself global ? How it is benefited and what are its challenges ? 10

SECTION - II

3. (a) There are variety of sensors that can be used in a Smart Car to enable various features and capabilities. Which is the most preferred protocol for car sensor ? It should support event driven message transfer and Queuing through wireless networks. Explain its working principle. 10
- (b) It is possible to transmit data without internet to many devices using LORAWAN Technology. Do you agree ? Justify your Answers with its features. 10
4. (a) This protocol in IOT uses Quality of Service (QoS) levels to ensure guaranteed delivery of messages to receivers, even when connections between devices are unreliable and also light weight. Name the protocol. Explain the concept and features. 10
- (b) Identify the connective technology for short range communication within 10 meters, minimum six devices need to connect without wire, data rate around 10 Mbps and good Quality of service. Explain the working of this technology. 10

SECTION - III

5. (a) Using AWS application development services Samsung wants to provide its customers with the facility to download the application anywhere without any network traffic. List the application and features of services provided by AWS. 10
- (b) A startup company wants to adopt cloud based IOT technology. Which cloud model would you suggest for startup ? Analyse with different cloud models. 10
6. (a) Airbnb is an international online market place for rental homes. This platform connects people who are looking for rental accommodation with those people who wants to rent out their houses. Quite soon Airbnb may become unable to handle the constant streaming of data on the website from its customers. What would you suggest to handle this overloading ? 10
- (b) Facebook is without a doubt, a wide spread social media platform. To build a scalable application Facebook wants to use AWS. Express your views on this. 10

SECTION - IV

7. (a) IOT devices make up 30% of all network connected end points. This leads to companies getting targetted by cyber criminals. Is security support on IOT devices essential ? State a better way to secure the IOT devices. 10
- (b) IOT based data acquisition system is a collection of software and hardware that allows one to measure or control physical characteristics of something in the real world. Analyse how physical data is measured and controlled in real world using data acquisition system with neat block diagram. 10
8. (a) There are number of common mistakes that organization may make when protecting itself against cloud vulnerabilities. What are the most common mistakes organisation make when it comes to protecting against cloud vulnerabilities and how can these mistakes be avoided ? 10
- (b) Here is a situation – you receive the following from the help desk : Dear XYZ Email user, to create space for more users we are deleting all inactive email accounts. Here is what you have to send to save your account from getting deleted. 10

Name : (First and Last) :

Email Login :

Password :

Date of Birth :

Alternate Email id :

If we don't receive the above information from you by the end of the week, your email account will be terminated. If you are a user, what will you do ? Justify your answer.

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SECTION - V

9. (a) In a Smart grid Sensors like voltage sensor, current sensor, power factor sensor etc. monitors required system parameters. The data is recorded in the system and historical data can be viewed whenever required from cloud. In order to design this system what are the components required and if the system behaves improperly, how do you test and trouble-shoot to make the system functional ? 10
- (b) The rapid urbanization of Delhi leads to Environmental problem. Air pollution, Water pollution and Noise pollution are the major environmental challenges that the city is facing. What IOT solution you will suggest and justify your answer. 10
10. (a) In a smart manufacturing company, sensors like temperature sensor, pressure sensor, vibration sensor, flow sensor, etc. monitor the required system parameters. The data is recorded in the system and historical data can be viewed whenever required using cloud. In order to design this system, what are the components required ? If the system behaves improperly, how do you test and trouble-shoot to make system functional ? 10
- (b) A driver who is driving IOT enabled car receives message as : (Real, Google location). Analyse this message using DIKW model. 10
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