

ii. Explain about supervisory control and data acquisition and working process in IoT. 6 2 3 3

29. a. Examine the different type of communication that takes place in IoT networks with a neat diagram. 10 3 3 3

(OR)

b. Demonstrate how the OSI model layer maps with different layers in IoT architecture. 10 3 4 3

30. a.i. What is data processing in IoT? 2 1 5 5

ii. Describe data processing cycles components and data storage in IoT-based applications. 8 6 5 5

(OR)

b. Discuss about time series data and its four characteristics used in data analytics. 10 2 5 5

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Reg. No.

**B.Tech. DEGREE EXAMINATION, NOVEMBER 2022**  
Sixth/ Seventh Semester

**18CSE462J – INTRODUCTION TO IOT**

(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

**Note:**

- (i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40<sup>th</sup> minute.  
(ii) **Part - B** should be answered in answer booklet.

Time: 2½ Hours

Max. Marks: 75

**PART – A (25 × 1 = 25 Marks)**

Answer **ALL** Questions

- |  | Marks | BL | CO | PO |
|--|-------|----|----|----|
| 1. A _____ tends to convert physical attribute to an electrical signal<br>(A) Actuator (B) Compiler<br>(C) Sensor (D) Motors   | 1     | 1  | 1  | 1  |
| 2. A _____ tends to convert electrical signal to physical action.<br>(A) Actuator (B) Compiler<br>(C) Sensor (D) Motors  | 1     | 1  | 1  | 1  |
| 3. What is IoT?<br>(A) Network of physical objects (B) Network of virtual objects embedded with sensors<br>(C) Network of objects in the ring (D) Network of sensors structure | 1     | 2  | 1  | 1  |
| 4. Who coined the term “Internet of things”?<br>(A) Kevin Aston (B) John Wright<br>(C) Edward Jameson (D) George Garton  | 1     | 2  | 1  | 2  |
| 5. Which of the following is not an IoT device?<br>(A) Table (B) Lapton<br>(C) Arduino (D) Tablet  | 1     | 1  | 1  | 1  |
| 6. Which of the following protocol is used to link all the devices in the IoT?<br>(A) HTTP (B) UDP<br>(C) Network (D) TCP/IP   | 1     | 2  | 2  | 1  |
| 7. Which service permits the changes to the IoT services?<br>(A) Update (B) Registered service status<br>(C) Enable from suspension (D) Enable                                 | 1     | 2  | 2  | 1  |
| 8. What is the component of an IoT system that executes a program?<br>(A) A sensor (B) A microcontroller<br>(C) An actuator (D) A digital to analog converter                  | 1     | 2  | 2  | 2  |

9. What is the full form of DHCP in IoT communication protocols? 1 2 2 2  
 (A) Dynamic host configuration protocol (B) Domain host communication protocol  
 (C) Dynamic host control protocol (D) Domain host control protocol
10. What is the full form of IDE in Arduino IDE IoT software? 1 2 2 2  
 (A) Intra defence environment (B) Intra development environment  
 (C) Integrated development environment (D) Integrated deployment environment
11. A sensor is a 1 1 3 2  
 (A) Subsystem (B) Machine  
 (C) Module (D) System, machine and module
12. The function of a sensor is to \_\_\_\_\_. 1 3 3 2  
 (A) Detect events within specified environment (B) Separate physical parameters  
 (C) Track and transfer data to computer processor (D) Both (A) and (C)
13. The temperature and humidity sensor values are printed in \_\_\_\_\_. 1 2 3 2  
 (A) OLED matrix (B) PIP  
 (C) PYPI (D) SDK
14. PIP stands for 1 1 3 2  
 (A) Package management system (B) Python package index  
 (C) PIP installs packages (D) Python management system
15. Requests package is very popular \_\_\_\_\_ library. 1 3 3 2  
 (A) MQTP (B) SMTP  
 (C) COAP (D) HTTP
16. Which protocol is light weight? 1 2 3 2  
 (A) MQTT (B) HTTP  
 (C) COAP (D) SPI
17. IoT promotes the creation of IoT terminal industry \_\_\_\_\_. 1 1 3 2  
 (A) Devices (B) Network  
 (C) Clusters (D) Thing
18. \_\_\_\_\_ is an open source stack for gateways and the edge. 1 3 4 3  
 (A) Eclipse Kapua (B) Red Hat  
 (C) Inter cloud (D) Eclipse Kura
19. Modbus communication protocol was developed in \_\_\_\_\_ year. 1 2 4 3  
 (A) 1970 (B) 1975  
 (C) 1980 (D) 1979
20. Modbus is a \_\_\_\_\_ type of communication protocol. 1 2 4 3  
 (A) Parallel (B) Serial  
 (C) Hybrid (D) Serial and parallel

21. What is stand alone acquisition systems often called? 1 2 3 3  
 (A) Data blogger (B) Data logger  
 (C) Data vlogger (D) Digital blogger
22. Output of A/D converter is \_\_\_\_\_. 1 3 4 4  
 (A) Given to an analog display (B) Given to a digital display  
 (C) Given to a CRO (D) Given to a voltmeter
23. What is a data acquisition system? 1 2 4 3  
 (A) System used for data processing, conversion and transmission (B) Accepts data as an input  
 (C) Removes noise (D) Boosts the signal
24. A typical data acquisition system consists of \_\_\_\_\_. 1 1 3 3  
 (A) OP amps (B) Sensors  
 (C) Rectifiers (D) Transistors
25. The data acquisition system implies input data collection \_\_\_\_\_. 1 3 5 4  
 (A) In mixed signal form (B) In analog form  
 (C) In digital form (D) In the form of binary codes

### PART – B (5 × 10 = 50 Marks)

Answer ALL Questions

- |   | Marks | BL | CO | PO |
|---|-------|----|----|----|
| 26. a.i. Discuss in detail about any one sample IoT use case and its application.   | 6     | 2  | 1  | 1  |
| ii. List out the advantages of IoT based on industrial application.   | 4     | 1  | 1  | 1  |
| <b>(OR)</b>   |       |    |    |    |
| b.i. Compare the consumer IoT and industrial IoT in detail.   | 8     | 4  | 2  | 2  |
| ii. Explain the role of the sensor and its types used in IoT architecture.  | 2     | 2  | 3  | 3  |
| 27. a. Describe the working principal MQTT broker protocol and how it relates to IoT and IIOT use case base application.                                  | 10    | 2  | 3  | 3  |
| <b>(OR)</b>   |       |    |    |    |
| b. Detail about the various parts of the internet of things reference architecture and how they connect to real-world applications in the business world. | 10    | 2  | 2  | 2  |
| 28. a. Analysis of role of data injection and data processing pipeline in IoT based application.  | 10    | 4  | 3  | 3  |
| <b>(OR)</b>   |       |    |    |    |
| b.i. Discuss the role of the industrial control system (ICS) in IIOT-based applications.  | 4     | 2  | 3  | 3  |