

- b. Write the need for application hosting on the ESR6300 industrial integrated services router. 10 3 4 1

29. a. Explain in detail about big data storage tools. 10 3 4 1

(OR)

- b. Discuss briefly about the features of big data visualization layer. 10 3 3 1

30. a. Determine the various communication models that can be used for weather monitoring systems. Which is more appropriate model? Describe the pros and cons. 10 4 5 2

(OR)

- b. Determine the type of data generated in water quality monitoring. Describe the alternative approaches for storing the data. 10 4 5 2

* * * * *

Reg. No.

B.Tech. DEGREE EXAMINATION, NOVEMBER 2022

Sixth/ Seventh Semester

18CSE447T – EDGE COMPUTING

(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 40th 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. Which of the following is used to capture data from the physical world in IoT devices? (A) Sensors (B) Actuators (C) Microprocessors (D) Micro controllers | 1 | 1 | 1 | 1 |
| 2. IoT gateway must provide (A) Protocol abstraction (B) Data storage (C) Security with hardware (D) Simple and fast installation | 1 | 1 | 1 | 2 |
| 3. Which layer is used for wireless connection in IoT devices? (A) Application layer (B) Network layer (C) Transport layer (D) Data link layer | 1 | 1 | 1 | 1 |
| 4. Identify the protocol used to link all devices in IoT? (A) Net (B) TCP/IP (C) HTTP (D) UDP | 1 | 2 | 1 | 2 |
| 5. Which of the following is false about IoT devices? (A) IoT devices use the internet for collecting and sharing data (B) IoT devices need micro controllers (C) IoT devices used wireless (D) IoT devices are completely safe technology | 1 | 2 | 2 | 2 |
| 6. Fog computing is utilized to _____ all devices in to a single platform (A) Integrate (B) Store (C) Task (D) Flexible | 1 | 1 | 2 | 1 |
| 7. What is edge computing? (A) A new name of computing (B) An architecture that process data as close as to its source as possible (C) A type of computing that leaves network teams on edge (D) Computing attempts when standing on the edge of something | 1 | 2 | 1 | 1 |

8. What is edge computing role in cloud computing? 1 1 2 1
 (A) Edge computing is the cloud silver lining (B) Edge computing could act as an alternative to cloud computing
 (C) They are the same (D) They are unrelated
9. What technological advancement contributed to edge computing's popularity? 1 1 1 1
 (A) IoT (B) The cloud
 (C) 5G (D) Wi-Fi 6
10. What issue is common in many edge computing challenges? 1 2 2 1
 (A) Bandwidth (B) Latency
 (C) Network security (D) Network traffic
11. What are the benefits of edge computing security? 1 1 3 1
 (A) Edge computing security only benefits IoT (B) Edge computing only secured data about edges, including mountain edges and table edges
 (C) Edge computing security can respond in real time and host behavioral threat analytics (D) Edge computing cannot be secured
12. Which one of the following protocol is light weight? 1 1 3 1
 (A) COAP (B) MQTT
 (C) HTTP (D) IP
13. Which of the following layer provides end to end communication in IoT? 1 1 3 2
 (A) Logical layer (B) Data link layer
 (C) Transport layer (D) Session layer
14. What is the range of Z-wave? 1 1 3 3
 (A) 30 to 100 m (B) 300 to 1000 m
 (C) 100 to 1000 m (D) Only 10 m
15. Which of the following protocols does not exist at the data link layer? 1 1 3 2
 (A) Zigbee smart energy (B) Lora WAN
 (C) Wireless HART (D) Secure MQTT
16. What is the role of big data in IoT's smart grid architecture? 1 1 3 2
 (A) Filter the data (B) Locked the data
 (C) Store data (D) Unlock the data
17. What is the main purpose of WoT (Web of Things) in the IoT? 1 1 4 2
 (A) Improve the usability and interoperability (B) Reduce the security
 (C) Complex the development (D) Increase the cost
18. Gateway provides the connection between _____ and _____. 1 1 4 2
 (A) Controller and device (B) Network and controller
 (C) Network and cloud (D) Cloud and controller

19. What is the sensor/ protocol used in GSN? 1 2 4 2
 (A) HTTP protocol (B) COAP protocol
 (C) MQTT protocol (D) XMPP protocol
20. What is the standard port number for secure MQTT? 1 2 4 3
 (A) 8000 (B) 8080
 (C) 8882 (D) 8883
21. Which interface does the finger print sensor use? 1 2 4 2
 (A) UART interface (B) COAP interface
 (C) SPI interface (D) I2P interface
22. The core element in smart city is operated by _____. 1 1 4 2
 (A) PaaS (B) SaaS
 (C) IaaS (D) IoT service provider
23. ITS stands for _____. 1 2 5 2
 (A) Internet travel services (B) Internet transportation security
 (C) Intelligent transportation security (D) Intelligent transportation services
24. The address of the original IEEE 802. MAC comes from _____. 1 2 4 2
 (A) IP address (B) MAC address
 (C) Ethernet address (D) HTTP
25. The huge number of devices connected to the IoT has to communicate automatically, not via humans, what is this called? 1 2 5 2
 (A) Bot 2 bot (B) Machine 2 machine
 (C) Inter cloud (D) Skynet

PART – B (5 × 10 = 50 Marks)

Answer **ALL** Questions

Marks BL CO PO

26. a. List the challenges in IoT, and explain in detail about compatibility issues and connectivity issues. 10 2 1 1
- (OR)**
- b. A construction company is looking to improve safety and efficiency at its sites. What is an example of solution that requires the use of IoT? 10 3 1 1
27. a. What are different layers of IoT protocol stack? Write the classification of IoT protocols? 10 3 2 1
- (OR)**
- b. Explain the working of MQTT. Compare MQTT and its secure version with the conventional internet protocols. 10 3 2 1
28. a. Discuss briefly about any one of the fog simulator, compare the pros and cons with the other for simulator. 10 4 4 1

(OR)