

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Third Semester

Computer Science with Artificial Intelligence – Core

INTERNET OF THINGS

(For those who joined in July 2022 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Who is the father of IoT?
 - (a) Kevin Atrun (b) Kevin Atrhur
 - (c) Kevin Ashton (d) Kevin Thomas
2. Several instructions execution simultaneously in?
 - (a) Processing (b) Parallel processing
 - (c) Serial processing (d) Multitasking

8. Communication between _____ and _____ is encrypted for security.
 - (a) Cloud and device
 - (b) End user and data center
 - (c) Network and device
 - (d) Cloud and Network
9. Using what the processor wake-up from power-down?
 - (a) External Interrupts
 - (b) Internal interrupts
 - (c) Serial Programming
 - (d) Program Counter
10. The number of elements in the Open IoT Architecture?
 - (a) 6 elements (b) 8 elements
 - (c) 7 elements (d) 3 elements

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the characteristics of IoT? Explain.
Or
(b) Describe the different types of environment monitoring in IoT.

3. Which characteristics involve the facility the thing to respond in an intelligent way to a particular situation?
 - (a) Intelligence (b) Connectivity
 - (c) Dynamic Nature (d) Enormous Scale
4. IoT devices are naturally vulnerable to _____ threats.
 - (a) Sensors (b) Heterogeneity
 - (c) Security (d) Connectivity
5. Which challenge comes under IoT devices, reliable bidirectional signaling.
 - (a) Signaling (b) Security
 - (c) Presence detection (d) Power consumption
6. With physical security, the stakes are incredibly _____.
 - (a) Very high (b) Low
 - (c) Very low (d) High
7. _____ are designed to protect data and servers.
 - (a) Physical walls
 - (b) Logical firewalls
 - (c) Both Physical and logical
 - (d) Neither physical nor logical

12. (a) Elaborate the domain model of IoT.
Or
(b) Summarize the IoT reference architecture with diagram.
13. (a) Distinguish between the SCADA and RFID protocols.
Or
(b) Point out the types of unified data standards.
14. (a) Explain the difference between Web of Things and Internet of Things.
Or
(b) Analysis the platform middleware for WoT.
15. (a) Highlight the clustering in internet of Things.
Or
(b) Identify the need of synchronization and software agents.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Examine the logical design of IoT.
- Or
- (b) Determine the steps to IoT design methodology.
17. (a) Outline the need of ETSI M2M high-level architecture.
- Or
- (b) Illustrate the implementation of OGC architecture with diagram.
18. (a) Draw and explain the general architecture of IEEE 802.15.4.
- Or
- (b) Elaborate the security services of BACNet protocol.

19. (a) Discuss the unified multitier WoT architecture.

Or

- (b) Analysis the purpose of cloud providers and systems.
20. (a) Demonstrate the agility in collaborative production environments.
- Or
- (b) Conclude the applications of electrical vehicle charging.
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