KAMARAJ COLLEGE (Autonomous)

Accredited with A+ Grade by NAAC

(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(3 Pages) **Reg. No:……**

Question Code: 26E01411 **Course Code : 24PECA24/25PECA24**

PG Degree - End Semester Examinations, April 2026

Second Semester

M.C.A

Internet of Things

(For those who joined in July 2024 and June 2025 onwards)

Time : 3 Hours **Maximum : 75 Marks**

PART – A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer :

CO:1 K:2 1. Show the communication model that uses a broker to send messages to multiple subscribers.

(a) request–response (b) exclusive pair

(c) publish–subscribe (d) push–pull

CO:1 K:2 2. Outline the protocol that enables IPv6 over low-power wireless networks.

(a) ZigBee (b) 6LowPAN

(c) Bluetooth (d) NFC

CO:2 K:2 3. Infer the language that primarily used in Arduino programming.

(a) Java (b) Python

(c) R (d) C

CO:2 K:2 4. Relate the layer that often uses virtualization in IoT architecture.

(a) Sensor layer only (b) Network and cloud layers

(c) Device layer only (d) Physical layer only

CO:3 K:2 5. Show the IoT application that used for soil moisture monitoring.

(a) Agriculture (b) Military

(c) Healthcare (d) Construction

CO:3 K:1 6. Choose the purpose of cloud in IoT systems.

(a) Sensing data (b) Actuating devices

(c) Power supply (d) Data storage and analytics

CO:4 7. Which factor most affects automation in smart cities?

K:1

(a) Weather conditions only
(b) Availability of IoT infrastructure
(c) Building height
(d) Population age

CO:4 8. Select a possible use case in smart city transportation.

K:1

(a) Smart irrigation
(b) Remote surgery
(c) Intelligent traffic signals
(d) Smart farming

CO:5 9. Label the IETF protocol that used for constrained IoT devices.

K:1

(a) CoAP
(b) HTTP
(c) FTP
(d) SMTP

CO:5 10. Find the security mechanism, supported by ETSI M2M.

K:1

(a) No access control
(b) Encryption
(c) Unlimited access
(d) Device authentication

PART – B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).
Answer should not exceed 250 words.

CO:1 11. (a) Examine the various characteristics of IoT.

K:4

(OR)

(b) Inspect the components in IoT technology stack.

CO:2 12. (a) Distinguish between Object-oriented programming and Multi-paradigm programming.

K:4

(OR)

(b) Survey the techniques used to achieve virtualization for IoT resource management.

CO:3 13. (a) Identify the significance of IoT in military applications.

K:3

(OR)

(b) Organize the potential challenges of cloud IoT.

CO:4 14. (a) Analyze the dimensions and components of smart city initiatives.

K:4

(OR)

(b) Classify the various IoT applications in smart cities.

CO:5 K:3 15. (a) Make use of the various security requirements in IoT and M2M network.

(OR)

(b) Identify the other M2M standard efforts in network security for IoT and M2M communications.

PART – C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).
Answer should not exceed 600 words.

CO:1 K:4 16. (a) Analyze the IoT architecture and its components.

(OR)

(b) Examine the fog based architecture of IoT and list out the advantages of fog computing.

CO:2 K:4 17. (a) Estimate the importance of interoperability in IoT.

(OR)

(b) Explain the various types of virtualization.

CO:3 K:3 18. (a) Make use of IoT in agriculture.

(OR)

(b) Utilize the various models in cloud IoT architecture.

CO:4 K:4 19. (a) Assess the design strategies of smart city using IoT.

(OR)

(b) Determine the technologies involved in smart education system.

CO:5 K:4 20. (a) Discuss the various network technologies for IoT and M2M.

(OR)

(b) Elaborate the technologies used for security in IETF M2M network.