

MCA
(SEM IV) THEORY EXAMINATION 2022-23
INTERNET OF THINGS

Time: 3 Hours**Total Marks: 100****Note:** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 10 = 20**

- (a) What are the components of IoT.
- (b) What is wireless sensor network?
- (c) Which of the communication protocols are used by IoT?
- (d) Why we use arduino?
- (e) Explain Smart Metering in brief.
- (f) What is IoT? Describe in detail about IoT ecosystem
- (g) Define Actuator.
- (h) What is data aggregation.
- (i) How to declare a function in arduino programming?
- (j) Explain E-health.

SECTION B**2. Attempt any three of the following: 10 x 3 = 30**

- (a) Explain about Industrial Internet of things (or IoT).
- (b) Discuss the different types of sensors used in IoT network?
- (c) Discuss the protocol used to link all the devices in the IoT? Explain in detail.
- (d) Explain about the Arduino IDE.
- (e) Explain the design challenge in IoT.

SECTION C**3. Attempt any one part of the following: 10 x 1 = 10**

- (a) Explain the various emerging IoT applications.
- (b) Explain the characteristics of wireless sensor network.

4. Attempt any one part of the following: 10 x 1 = 10

- (a) Describe in detail with suitable example CoAP and MQTT protocols used in application layer.
- (b) Explain the all the features provided by python in IoT development.

5. Attempt any one part of the following: 10 x 1 = 10

- (a) Explain the security challenges in IoT.
- (b) Express how to organizing and analytics in IoT/M2M?

6. Attempt any one part of the following: 10 x 1 = 10

- (a) Explain wireless sensor network architecture and its applications.
- (b) Discuss the issues in scaling up the software for large scale IOT devices.

7. Attempt any one part of the following: 10 x 1 = 10

- (a) Discuss control statements? Explain all the arduino control statements with syntax.
- (b) Discuss environmental cost of internet service for IOT device and its the solution?