

**Roll No.**

**Total No. of Pages : 2**

**Total No. of Questions : 09**

**MCA (Sem.-4)**

## IOT & BLOCKCHAIN TECHNOLOGY

**Subject Code : PGCA1967**

**Paper ID : 91862**

**Date of Examination : 18-05-23**

**Time : 3 Hrs.**

**Max. Marks : 70**

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

## SECTION-A

**1) Write short notes on :**

- What is IoT?
- Name the communication protocols used in IoT architecture.
- What is the purpose of a functional block?
- Mention few domain specific applications of IoT.
- What is a sensor and an actuator in IoT system?
- Outline the characteristics of a smart contract.
- How transaction in bitcoin network takes place?
- Differentiate block propagation and block delay.
- What is block mining?
- How is blockchain used in KYC based applications?

### **SECTION-B**

- 2) Describe the communication models and communication APIs in IoT framework.
- 3) Briefly explain the different IoT levels and deployment templates.
- 4) Discuss the protocols: MQTT, CoAP and ZigBee used in IoT communication model.
- 5) Elaborate any two application domains where use of IoT can be beneficial and how?

### **SECTION-C**

- 6) What is a bitcoin script? Discuss Bitcoin P2P network components.
- 7) Describe various security attacks in blockchain highlighting 50% majority attack.
- 8) Explain in detail how can Distributed Consensus works on a blockchain network?
- 9) **Write short notes on the following:**
  - a) Payments and double spending problem
  - b) Public vs. Private blockchain.