Progressive Education Society's

Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16 (Autonomous)

End Semester Examination: March/April 2025

Faculty: Science and Technology

Program: BCA **Semester:** VI **SET:** A

Program (Specific): BCA (Science) **Course Type:** DSE

Class: TYBCA (Science) **Max. Marks:** 70

Name of the Course: Internet of Things (IoT) **Course Code:** 24-BCA-363

Time: 3Hr **Paper:** I

Instructions to the candidate:

1) *There are 4 sections in the question paper. Write each section on separate page.*
2) *All Sections are compulsory.*
3) *Figures to the right indicate full marks.*
4) *Draw a well labelled diagram wherever necessary.*

Q1) Attempt the following

A) Choose the correct option **[5*1=5]**

1. Which of the following is not example of Real Time Embedded System

a. Air Traffic Control System b. Process Control System

c. Autonomous Driving System d. Electronic Feedback System

2. IoT makes virtually everything" _____" by improving aspects of our life with the power of data collection, AI algorithm, and networks.

a. Visible b. Available

c. Fast d. Smart

3. In IoT network node density of IoT network is _____

a. High b. Low

c. Medium d. None

4. _____is a Spread Spectrum technique used by Bluetooth

a. Hoc Network b. Structural monitoring

c. Frequency Hopping d. Tiny OS

5. IoT protocols enable _____ to exchange data

a. Data Lines b. Addressee Lines

c. Internet Protocols d. Fiber optic cables

B) Attempt the following **[5*1=5]**

1. Define PaaS, with suitable example
2. Enlist any four features of Cloud Computing
3. State different kind of RFID tags
4. Name different types of sensors
5. State any four applications of IoT

Q2) Answer the following (any 5) **[5*3=15]**

1. Define Actuators, Enlist varieties of actuators available in market
2. What is mean by SoC and ASICs?
3. Define interoperability of the devices, enlist its types
4. Compare Logical Design and Physical design
5. Define single hop network with suitable diagram
6. Give examples of IoT network protocol and data protocol

Q3) Answer the following (any 5) **[5*4=20]**

1. Draw block diagram of microcontroller system explain each block
2. Which are the four pillars of IoT? Elaborate anyone.
3. Explain Zigbee network topologies
4. Which are the four main categories of cloud deployment models? Explain each in detail
5. Draw neat and complete block diagram of "How IoT Device work?"
6. Which are the major components of IoT? Explain each in detail.
7. How may are the IoT levels and deployment templates? Explain any one in detail

Q4) Answer the following (any 5) **[5*5=25]**

1. Draw tree diagram for types of Microcontrollers. Explain each branch.
2. Write a note on IoT enabling Technologies
3. List and explain in detail all types of IoT network
4. What are the different service modes of cloud computing? Explain each in detail.
5. Write a note on Amazon web services for IoT and Skynet IoT.
6. Draw and explain general layout of an embedded system? Enlist any 4 types of embedded processors
7. State application domains of IoT and describe any one I detail.

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