

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(Fifth Semester)

Branch – COMPUTER SCIENCE

MAJOR ELECTIVE COURSE – I : INTERNET OF THINGS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

- 1 What does **PaaS** stand for in the context of IoT platforms?
(i) Platform as a Service (ii) Process as a Service
(iii) Protocol as a Service (iv) Product as a Service
- 2 Which protocol is commonly used for low-power, low-data-rate IoT communications and is part of the IEEE 802.15.4 standard?
(i) Bluetooth (ii) IPv6
(iii) Wi-Fi (iv) ZigBee
- 3 Which term describes a small computer system integrated onto a single chip used in embedded systems?
(i) Transducer (ii) Microcontroller
(iii) Sensor (iv) Actuator
- 4 Which approach involves connecting various types of devices to the internet and integrating them into a single network?
(i) Networking (ii) Connectivity
(iii) Integration (iv) Interoperability
- 5 Which type of analytics focuses on processing and analyzing data as it is generated in real-time?
(i) Batch (ii) Predictive
(iii) Streaming (iv) Historical

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a Explain the concept of Sensor to Cloud Management in the context of IoT.
OR
b Write the role of Azure IoT Hub in IoT device management.
- 7 a Explain the role of IEEE 802.15.4 in the IoT ecosystem.
OR
b Explain the significance of Service Discovery Protocols in IoT.
- 8 a Explain the role of Microcontrollers in IoT systems.
OR
b Evaluate the significance of Design Methodology in developing IoT systems.

Cont...

- 9 a Analyze the role of 5G technology in enhancing the IoT ecosystem.
OR
b Explain the significance of Low Power Wide Area Networking (LPWAN) technologies in IoT applications.
- 10 a Evaluate the principal steps involved in knowledge discovery and dissemination in IoT data analytics.
OR
b Explain the concept of real-time analytics and its significance in managing IoT data.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Compare M2M (Machine to Machine) and D2C (Device to Cloud) communication in the context of IoT.
OR
b Explain the concept of IoT Platform as a Service (PaaS).
- 12 a Examine the layered architecture of IoT and its significance.
OR
b Evaluate the role of Infrastructure Protocols in IoT.
- 13 a Evaluate the impact of System on Chips in the design and development of IoT systems.
OR
b Explain the concept of parametric characterization in sensors.
- 14 a Analyze the role of Software Defined Networking (SDN) and Network Functions Virtualization (NFV) in improving the management and efficiency of IoT networks.
OR
b Explain the role of cloud computing in IoT analytics.
- 15 a Explain how big data analytics can leverage this data to enhance IoT applications.
OR
b Elaborate the challenges and future trends of IoT in healthcare.

Z-Z-Z

END