

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Sixth Semester)

Branch – **COMPUTER SCIENCE WITH DATA ANALYTICS**

DISCIPLINE SPECIFIC ELECTIVE – II : 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 is the primary function of an actuator in an IoT system?
 - i) To sense environmental changes
 - ii) To process data from sensors
 - iii) To control physical devices or systems
 - iv) To transmit data to the cloud
2. Which of the following statements is true regarding the optimization of IP for IoT?
 - i) IoT devices primarily use private IP addresses for communication
 - ii) IoT devices do not require IP addresses for communication
 - iii) IoT devices must have unique public IP addresses for communication
 - iv) IoT devices can only communicate over IPv4 networks
3. What is the primary purpose of data analytics in IoT?
 - i) To collect data from IoT devices
 - ii) To visualize data for end-users
 - iii) To analyze data and extract insights
 - iv) To security of IoT devices
4. Which of the following is a primary challenge in IoT security?
 - i) Lack of IoT devices
 - ii) Interoperability between devices
 - iii) Limited bandwidth
 - iv) Slow data processing
5. What is the primary objective of implementing IoT in smart parking systems?
 - i) To increase the number of parking spaces
 - ii) To reduce traffic congestion
 - iii) To enhance user experience and optimize parking operations
 - iv) To decrease the cost of parking infrastructure

SECTION - B (15 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks

(5 x 3 = 15)

6. a) What is IoT oneM2M architecture? Explain.
(OR)
b) Summarize the IoT data management and computer stack.

Cont...

7. a) Determine the need of optimization in IoT.
(OR)
b) Write short notes on physical and MAC layer.
8. a) Describe the data analytics in IoT.
(OR)
b) Show the role of machine learning in IoT.
9. a) Enumerate the overview of the key milestones and developments in IoT security.
(OR)
b) Highlight the security challenges in IoT.
10. a) Explain the benefits of grid blocks reference model.
(OR)
b) Examine the Centralized Control System in street lighting.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. a) Explain the simplified architecture of an IoT system, highlighting its key components and their roles.
(OR)
b) Explain the roles of sensors, actuators, and smart objects in an IoT ecosystem. Discuss how they interact with each other and contribute to the functionality and intelligence of IoT systems.
12. a) What is IEEE 802.15.4, 802.15.4g, 802.15.4e protocol in IoT? Explain with a neat diagram.
(OR)
b) Evaluate the application protocols in IoT.
13. a) What is big data analytics in IoT? What is the application of big data analytics in IoT?
(OR)
b) Elaborate the key aspects of network analytics in IoT.
14. a) Explain in brief any 3 key security practices and systems commonly employed in IoT environments.
(OR)
b) Elaborate the octave and fair in IoT.
15. a) Describe the overview of the key components and layers of connected manufacturing architecture for the connected factory in IoT.
(OR)
b) What is smart traffic management system using IoT? Sketch on its Architecture.

Z-Z-Z

END