7E1821

7E1821
B. Tech. VII - Sem. (Main / Back) Exam., - 2024
Computer Science & Engineering
7CS4-01 Internet of Things

Time: 3 Hours   **Maximum Marks: 70**

Instructions to Candidates:

Attempt all ten questions from Part A, five questions out of seven questions from Part B and three questions out of five questions from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____   2. NIL _____

PART – A   [10×2=20]
(Answer should be given up to 25 words only)
All questions are compulsory

Q.1   Explain the role of things in IoT.

Q.2   What is the use of GPIO Pins in an IoT device?

Q.3   Explain the flavors of Linux OS supported by Raspberry Pi device.

Q.4   What is the use of SPI interface on Raspberry Pi?

Q.5   What are 4 aspects in one's business to Master IoT?

Q.6   What role does the network play in the Internet of everything?

Q.7   Live few examples of impact of Internet of Things (IoT) on our lives.

Q.8   What are interrupts in Arduino?

Q.9   What Python libraries used in Raspberry Pi to control GPIO Pins?

Q.10 What is application of IoT in Healthcare?

PART – B

[5×4=20]

(Analytical/Problem solving questions)

Attempt any five questions

Q.1 Explain the major services used in cloud computing technology.

Q.2 Describe how wireless sensor networks become one of the enabling technologies of IoT?

Q.3 Explain the differences between Machines in M2M and Things in IoT?

Q.4 Describe the structure of Network Function Virtualization for IoT.

Q.5 What impacts will the Internet of Things (IOT) have on transportation sector?

Q.6 Write down the differences between Rest API and Web Socket API.

Q.7 Describe the steps for designing IoT system with neat diagram.

PART – C

[3×10=30]

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any three questions

Q.1 Explain the role of big data analysis in IoT and define its characteristics.

Q.2 Explain how IoT technology used to enable the agricultural industry to increase operational efficiency, lower costs, reduce waste and improve the quality of their field?

Q.3 Describe the implementation of IoT technology into distributed energy system to optimize the efficiency of energy infrastructure and reduce wastage in the renewable energy systems.

Q.4 Explain functional view, information view, deployment and operational view and other relevant architectural views of IoT reference architecture.

Q.5 Write short note on -

(i) Lite OS   (ii) Contiki OS   (iii) Ultra Sonic Sensor

7E1824

7E1824
B. Tech. VII - Sem. (Main / Back) Exam., - 2024
Information Technology
7IT4-01 Big Data Analytics
AID, IT

Time: 3 Hours

Maximum Marks: 70

Instructions to Candidates:

Attempt all ten questions from Part A, five questions out of seven questions from Part B and three questions out of five questions from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____   2. NIL _____

PART – A

[10×2=20]

(Answer should be given up to 25 words only)

All questions are compulsory

Q.1   What is Big Data?

Q.2   Summarize the data types for big data.

Q.3   Define HDFS.

Q.4   What is advantage of MapReduce?

Q.5   Define Clustering.

Q.6   What is Scaling out?

Q.7   What is PIG?

Q.8   Define Hive.

Q.9   Define Data Node in HDFS.

Q.10   What are Custom comparators?

PART – B

[5×4=20]

(Analytical/Problem solving questions)

Attempt any five questions

Q.1 Classify the components of Hadoop framework.

Q.2 Explain MapReduce with the help of example.

Q.3 Describe briefly about Hadoop Input and output and write a note on Data Integrity.

Q.4 Explain the PIG Latin data types and examples.

Q.5 Illustrate main features and architecture of Hive with neat diagram.

Q.6 Explain the concept of 3V's of big data.

Q.7 Explain in detail about the PIG architecture.

PART – C

[3×10=30]

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any three questions

Q.1 Explain core architecture of Hadoop with suitable block diagram. Discuss role of each component in detail.

Q.2 Write and explain in detail the concept of developing the MapReduce Application.

Q.3 Explain HDFS operation in detail also describe Namenode, Datanode and block.

Q.4 Explain the operators supported by PIG with respect to Data Access, Transformations and Debugging operations. Also describe local and distributed modes of running PIG Scripts.

Q.5 Analyze the use of Hive in details. How does Hive Interact with Hadoop explain in detail? Also explain the Hive data Manipulation, Queries and data definition.

7E1811

7E1811

B. Tech. VII - Sem. (Main / Back) Exam., - 2024
Open Elective – I
7AG6-60.2 Environmental Engineering and Disaster Management

Time: 3 Hours   **Maximum Marks: 70**

Instructions to Candidates:

Attempt all ten questions from Part A, five questions out of seven questions from Part B and three questions out of five questions from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1.   NIL _____   2.   NIL _____

PART – A   [10×2=20]

(Answer should be given up to 25 words only)

All questions are compulsory

Q.1   What is the importance of safe water supply?

Q.2   What are the standard of drinking water?

Q.3   What is solid waste?

Q.4   What are the different types of pollutions?

Q.5   What is disaster management?

Q.6   What do you mean by wastewater?

Q.7   Define chemical oxygen demand.

Q.8   Define total organic carbon.

Q.9   What are the physical & chemical parameter of the water quality?

Q.10   What are the different types of pollutant in wastewater?

PART – B   [5×4=20]

(Analytical/Problem solving questions)

Attempt any five questions

Q.1   What is hardness? Define Dissolve oxygen and Biological oxygen demand.

Q.2   Why soiling and corrosion are hidden cost of air pollution? Explain.

Q.3   How do individual contaminants affects human health? Explain it.

Q.4   Differentiate between natural and man-made pollution with examples.

Q.5   Discuss the role of green house in disaster management.

Q.6   Explain term Air Pollution. Discuss the types of air pollutants which causes air pollutions.

Q.7   Write the different step involve in domestic wastewater treatment plant.

PART – C   [3×10=30]

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any three questions

Q.1   What is landslide? What are the causes of landslide? Explain.

Q.2   Explain term deforestation. Discuss the factors promoting deforestation.

Q.3   Discuss the treatment methods of effluent domestic water, wastewater and industrial wastewater.

Q.4   What are the different BIS standard for pollutants in air? Explain it.

Q.5   Discuss manmade disaster due to lack of public awareness. Explain relationship between national security and disaster.