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7E1821

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B.Tech. VII Sem. (Main) Examination December- 2023
Computer Sc. and Engg.
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).

PART - A

(Answer should be given up to **25** words only)

All questions are **compulsory.** **(10×2=20)**

1. Define the challenges of IoT. (2)
2. Write the difference between IoT and M2M communication. (2)
3. What is a smart home? (2)
4. What is software defined network? (2)
5. Explain uniform resource identifiers (URIS). (2)
6. List any four design and development challenges in IoT. (2)
7. Explain IoT applications in Environment. (2)
8. Differentiate between Arduino and Raspberry Pi? (2)
9. List layers of IoT protocol. (2)
10. What is the connection between IoT and sensors in the commercial enterprises? (2)

PART - B

(Analytical/Problem solving questions)

Attempt any Five questions. **(5×4=20)**

1. Explain the various areas in the health and lifestyles domain that IoT is making an impact. **(4)**

2. Describe network function virtualization. **(4)**

3. What is cloud computing? Is cloud computing used in Internet of things? Explain the advantages of cloud computing. **(4)**

4. Explain four stages of IoT architecture. **(4)**

5. Write the differences between URI and URL. **(4)**

6. Explain about IoT communication APIS in detail. **(4)**

7. With the help of proper diagram explain the logical design of IoT. **(4)**

PART - C

(Descriptive/Analytical/Problem Solving/Design questions)

Attempt any Three questions. **(3×10=30)**

1. what is wireless sensor network? Explain the IoT levels in details. **(10)**

2. What is sensor? How sensors are different from actuator? Explain humidity sensor, ultrasonic sensor and temperature sensor in detail. **(10)**

3. What is REST model? Why it is important? Explain the REST methods? **(10)**

4. How software defined network different from traditional network? Explain the SDN architecture? What are the four key characteristics of an SDN architecture? **(10)**

5. What do you understand by home automation? What are the basic requirement for home automation? Explain the smart cities build with the help of IoT in detail. **(10)**

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7E1721

B.Tech. VII-Sem. (Back) Examination, December - 2023
Computer Sc. & Engg.
7CS4-01 Internet of Things

Time : 3 Hours **Maximum Marks : 120**
Min. Passing Marks : 42

Instructions to Candidates:

*Attempt all **Ten** questions from Part A, Five question out of seven from Part B and Fo9ur questions out of Five 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).

PART - A

Answer should be given up to 25 words only.

All questions are compulsory. **(10×2=20)**

1. Write the difference between sensors and actuators.
2. What is MQTT?
3. Define smart agriculture.
4. What is IOT connectivity?
5. Explain different characteristics of IOT?
6. What is requirement of IOT protocol standardization?
7. Why do IOT system have to be self adapting and self configuring?
8. Which of the communication protocols are used by IOT?
9. Differentiate between Raspberry pi and desktop computer?
10. Define RFID.

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PART-B

Analytical/Problem Solving questions.

Attempt any Five questions. **(5×8=40)**

1. Why security required in IOT? Explain detail various security in internet of things. **(3+5)**
2. Explain layered IOT architecture using a figure. **(8)**
3. Explain the application of IOT in home automation systems. **(8)**
4. How Big Data can be used in IOT? **(8)**
5. Explain the concepts and terminology of RFID Application. **(8)**
6. What are basic components of sensor network? **(8)**
7. What is threat analysis in internet of things ? Explain in detail threat analysis. **(3+8)**

PART - C

(Descriptive/Analytical/Problem Solving/ Design questions) **(4×15=60)**

Attempt Any Four Questions.

1. What is Role of the IOT for increased Autonomy and Agility in collaborative production Environments ? Write in detail business model scenario for IOT? **(7+8)**
2. Explain in detail clustering principal in IOT? Also write what is software defined Network in detail? **(8+7)**
3. Write in detail business model Scenario for IOT? What are the components and communication media required for making smart building. **(6+9)**
4. Discuss area of development and standardization in IOT. Explain in detail HLSA IOT frame work. **(8+7)**
5. Identify the key characteristics of M2M data. Also explain the data generation, data acquisition, data validation steps, data storage, data processing and data Analysis steps in M2M data management . **(5+10)**

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B.Tech. VII-Sem. (Main) Examination, December - 2023
Information Technology
7IT4-01 Big Data Analytics

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

Instructions to Candidates:

*Attempt **All Ten** questions from **Part A, Five** questions out of **Seven** 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).

PART - A

(Answer should be given up to 25 words only)

All questions are Compulsory. **(10×2=20)**

1. What is Big Data? How does it works?
2. What are the different platforms to deal with Big Data?
3. What is the necessity of driver code?
4. List the components of a map reduce application that we can develop
5. Define the following wrappers Null writable, Object writable
6. Define the significance of comparator.
7. Define the basic syntax of a pig.
8. What are the three key design principles pig latin?
9. What is Hive Data Manipulation Language.?
10. Write at least two differences between pig and hive.

PART-B

(Analytical/Problem Solving questions)

Attempt any Five questions. **(5×4=20)**

1. Discuss the problems with traditional large scale systems along with features of big data.
2. What is a Data Node? How many instances of Data Node run on a Hadoop Cluster.
3. Explain the role of combiner, record reader and partitioner within a map reduce program model of Hadoop
4. Explain the Writable class hierarchy with a neat sketch.
5. Explain with an example, how Hadoop uses scale out feature to improve the performance.
6. Explain the four data types of Pig's data model with an example.
7. How can we install the Apache Hive on the system-Explain

PART - C

(Descriptive/Analytical/Problem Solving/Design questions)

Attempt any Three questions. **(3×10=30)**

1. Discuss the google file system and Hadoop Distributed File System in detail.
2. Explain about the implementation of map reduce concept with an example.
3. Explain the significance of writable interface along with writable comparable and comparators w.t.to implementing the serialization
4. Discuss about the operators supported by PIG along with PIG commands
5. Draw the architecture of Hive and explain about the various data types supported by HIVEQL with an example.

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B.Tech. VII-Sem. (Back) Examination, December - 2023
Information Technology
7IT4-01 Big Data Analytics

Time : 3 Hours **Maximum Marks : 120**
Min. Passing Marks : 42

Instructions to Candidates:

Attempt All Ten questions from Part A, Five questions out of Seven from Part B and Four questions out of Five 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).

PART - A

(Answer should be given up to 25 words only)

ALL questions are Compulsory. **(10×2=20)**

1. What is the meaning of HIVE client?
2. Write 3V's of Big data?
3. Define wrapper class?
4. Define Byte and Object?
5. How does Big data work?
6. What is a PIG?
7. Define Hadoop cluster?
8. Write down the features of configuring XML?
9. Write file formats supported by HIVE.
10. What is Hadoop distribution file system?

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PART-B

(Analytical/Problem Solving questions)

Attempt any FIVE questions. **(5×8=40)**

1. What are the advantages and disadvantages of Hadoop?
2. Describe in brief the PIG architecture.
3. What are object writable and generic writable.
4. What are the different data type of schemes in HIVE?
5. Describe the brief about API for MAP reducc framc work.
6. Explain HDFS and its components.
7. Discuss in brief about the building block of hadoop.

PART - C

(Descriptive/Analytical/Problem Solving/Design questions)

Attempt any FOUR questions. **(4×15=60)**

1. Explain data manipulation in HIVE?
2. Compare google file system and Hadoop distributed file system write different sources of Big data.
3. Explain the following
   a) Raw comparator for speed
   b) Querying and analyzing data
4. How can be configure the Hadoop cluster and also explain Hadoop mapper code.
5. Discuss about the architecture of HIVE. And also explain how to create and manage database and tables.
