R-14

Code: 4G441

II B.Tech. II Semester Supplementary Examinations Nov/Dec 2019

Database Management Systems

(Common to CSE & IT)

Max. Marks: 70   Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) Explain the advantages of using a query language instead of custom programs to process data.
   b) What is data independence and how does a DBMS support it?

OR

2. a) What are the different types of user interface designed for database users? Discuss the main activities of each.
   b) Briefly discuss about architecture of database system with diagram.

UNIT–II

3. a) Explain the distinctions among the terms primary key, candidate key, and superkey
   b) Name the main steps in database design. What is the goal of each step? In which step is the E-R model mainly used?

OR

4. a) Explain the following terms: i) Relationship set ii) Composite attribute iii) Multivalued attribute iv) Derived attribute
   b) Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted.

UNIT–III

5. a) What are views? Discuss the problems encountered in modifying database through views.
   b) Explain the differences between Triggers and constraints

OR

6. Consider the following schema:

   Suppliers (sid: integer, sname: string, address: string)

   Parts(pid: integer, pname: string, color: string)

   Catalog(sid: integer, pid: integer, cost: real) The Catalog relation lists the prices charged for parts by Suppliers.

   Write the following queries in SQL:

   i. For each part, find the sname of the supplier who charges the most for that part.
   ii. Find the sids of suppliers who supply only red parts.
   iii. Find the sids of suppliers who supply a red part and a green part.

UNIT–IV

7. a) Compare 3NF and BCNF with a suitable example
   b) What is dependency preserving for decomposition? Explain why it is important

OR

8. a) Explain why 4NF is more desirable than BCNF
   b) What is Normalization? Explain briefly 1NF, 2NF & 3NF with suitable examples.

UNIT–V

9. a) How is data organized in a tree-based index? When would you use a tree?
   b) Why are tree-structured indexes good for searches?

OR

10. a) How does a B+ tree index handle search, insert and delete?
    b) With diagram, explain tree structure index

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Code: 4G144

II B.Tech. II Semester Supplementary Examinations Nov/Dec 2019
Object Oriented Programming Through JAVA
(Common to CSE & IT)

Max. Marks: 70   Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)
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UNIT–I

1. a) List and describe Java Buzzwords.

    b) What is an array? Write a Java program to print upper triangle values of a given two dimensional array.

OR

2. a) Define a class? What is the general form of a class? How objects are declared explain with an example?

    b) Define Constructor. With suitable example explain constructor over loading.

UNIT–II

3. a) Define Inheritance. Explain how one class inherit another class with an example.

    b) Define package. Write a simple java program to implement package.

OR

4. a) When a class called as abstract classes? Explain,

    b) Is interfaces can be extended? Explain with an example.

UNIT–III

5. a) List and explain the exception handling keywords.

    b) Describe the main thread in java.

OR

6. a) Describe the nested try statements.

    b) Differences between Multithreading and Multitasking.

UNIT–IV

7. a) List AWT controls. Explain Label control.

    b) How applets are differed with applications.

OR

8. a) Briefly explain ArrayList Class.

    b) Write a simple program to illustrate GridLayout.

UNIT–V

9. a) Define an Event. List and briefly describe the event listener interfaces.

    b) What are the limitations of AWT?

OR

10. a) Implement simple client server using TCP/IP Sockets.

    b) What is the need of Adapter class?

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Code: 4GC42

II B.Tech. II Semester Supplementary Examinations Nov/Dec 2019
Probability and Statistics
(Common to CE, ME and CSE)

Max. Marks: 70   Time: 3 Hours

PART-A

Answer *the following* units by choosing one question from each unit (3 x 14 = 42 Marks)
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UNIT–I

1. Given P(A)=1/4, P(B)=1/3 and $P(A \cup B) = 1/2$, then evaluate

    $P(A/B)$, $P(B/A)$, $P(A \cap B')$ and $P(A'/B')$ 14M

OR

2. A random variable X has the following probability function values of X.

x:	-2	-1	0	1	2	3
p(x):	0.1	K	0.2	2k	0.3	k

    Find the value k, $P(X \geq -1)$, $P(X \leq 2)$, mean and variance   14M

UNIT–II

3. a) The probability that a pen manufactured by a company will be defective is 1/10. If 12 such pens are manufactured, find the probability that (a) exactly two will defective, (b) at least two will be defective and (c) none will be defective.   7M

    b) Fit a Poisson distribution to the frequency distribution

x:	0	1	2	3	4
f:	46	38	22	9	1

    7M

OR

4. a) The weekly wages of workers in a company are normally distributed with mean of Rs. 700 and standard deviation of Rs. 50. Find the probability that the weekly wage of a randomly chosen worker is (i) between Rs. 650 and Rs. 750, and (ii) more than Rs. 750.   7M

    b) For the normal distribution with mean 2 and standard deviation 4, evaluate (i) $P(-6 < x < 3)$, (ii) $P\{x \geq 5\}$ and (iii) $P(\{|x| < 4\})$.   7M

UNIT–III

5. A population consists of the four numbers 3, 7, 11, 15. Consider all possible samples of size 2 which can be drawn with replacement from this population. Find the population mean and standard deviation, and mean and standard deviation of the sampling distribution of means.   14M

OR

6. a) The standard deviation of the life-times of television tubes manufactured by a company is estimated as 100 hours. Find how large a sample must be taken in order to be 99% confident that the error in the estimated mean life-time will not exceed 20 hours   7M

    b) Find 95% confidence limits for the mean of a normality distributed population from which the following sample was taken 15,17,10,18,16,9,7,11,13,14.   7M

UNIT–IV

7. a) A sample of 400 items is taken from a population whose standard deviation is 10. The mean of the sample is 40. Test whether the sample has come from a population with mean 38. Also calculate 95% confidence interval for the population   7M

    b) Experience had shown that 20% of a manufactured product is of the top quality. In one day production of 400 articles only 50 are of top quality. Test the hypothesis at 0.05 level   7M

OR

8. The mean yield of wheat from a district A was 210 pounds with S.D 2.5 inches per acer from a sample of 100 plots. In another district the mean yield was 220 pounds with S.D 12 pounds from a sample of 150 plots. Assuming that the S.D of yield in the entire state was 11 pounds. Test whether there is any significant difference between the mean yield of crops in the two districts   14M

UNIT–V

9. In an investigation on the machine performance, the following results are obtained

	No. of units inspected	No. of defectives
Machine I	375	17
Machine II	450	22

Test whether there is any significant performance of two machines at α = 0.05   14M

OR

10. From the following data, find whether there is any significant liking in the habit of taking soft drinks among the categories of employees

Employees

Soft Drinks	Clerks	Teachers	Officers
Pepsi	10	25	65
Thumsup	15	30	65
Fanta	50	60	30

14M

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