II B.Tech. II Semester Supplementary Examinations May 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) Identify the main components in a DBMS and explain what they do.   7M

    b) What are the advantages of DBMS? Explain.   7M

OR

2. a) What are five main functions of a database management administrator?   7M

    b) Explain various storage manager components and its functions.   7M

UNIT–II

3. Draw ER diagram for the company database incorporating all the ER notations with explanation.   14M

OR

4. a) What are the steps in designing a database?   7M

    b) With examples, explain enforcing integrity constraint.   7M

UNIT–III

5. a) Consider the following tables:

    Employee (Emp_no, Name, Emp_city)
    Company (Emp_no, Company_name, Salary)

    i.   Write a SQL query to display Employee name and company name.   7M
    ii. Write a SQL query to display employee name, employee city ,company name and salary of all the employees whose salary >10000
    iii. Write a query to display all the employees working in 'XYZ' company.

    b) Briefly discuss about aggregate functions. Explain any three aggregate functions.   7M

OR

6. a) Briefly discuss about virtual table.   7M

    b) With an example explain trigger and its needs.   7M

UNIT–IV

7. a) Compare 3NF and BCNF with a suitable example.   7M

    b) What is dependency preserving for decomposition? Explain why it is important.   7M

OR

8. a) Suppose you are given a relation R = (A,B,C,D,E) with the following functional dependencies: {CE$\rightarrow$D, D$\rightarrow$B, C$\rightarrow$A}.

    i.   Find all candidate keys.
    ii. Identify the best normal form that R satisfies (1NF, 2NF, 3NF, or BCNF).   7M
    iii. If the relation is not in BCNF, decompose it until it becomes BCNF. At each step, identify a new relation, decompose and re-compute the keys and the normal forms they satisfy.

    b) Explain 1st normal form(1 NF) with example.   7M

UNIT–V

9. a) Explain the distinctions between the terms Serial schedule and Serializable schedule.   7M

    b) Why does a DBMS interleave current transactions?   7M

OR

10. a) Briefly discuss the AICD prosperities of transaction.   7M

    b) What are the main difference between ISAM and B+ tree indexes?   7M

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R-14

Code: 4G144

II B.Tech. II Semester Supplementary Examinations May 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) Explain Object Oriented Programming concepts.

OR

2. a) List and classify the operators used in java. Explain any two operator classifications.
   b) Define recursion. Write a java program to find the factorial of a given number using recursion.

UNIT–II

3. a) What is meant by method overriding? Illustrate with an example.
   b) How packages are imported? Explain with suitable example.

OR

4. a) What are the uses of final keyword in inheritance? Explain with suitable examples.
   b) How to find packages and CLASSPATH in package? Explain.

UNIT–III

5. a) Explain isAlive() and join() methods in threads.
   b) How to create own exception sub class? Explain with example.

OR

6. a) Explain suspending, resuming and stopping threads.
   b) Write the benefits of Exception handling.

UNIT–IV

7. a) List the collection interfaces. Describe List interface.
   b) Explain applet life cycle with suitable program.

OR

8. a) With suitable example explain StringTokenizer.
   b) Describe the window fundamentals.

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) Write a java program to implement mouse events.
    b) Describe URL connection

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II B.Tech. II Semester Supplementary Examinations May 2019
Probability and Statistics
(Common to CE, ME and IT)

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. a) A Problem in statistics is given to the three students A, B and C whose chances of solving it are 1/2, 3/4 and 1/4 respectively. What is the probability that the problem will be solved if all of them try independently? 7M

    b) State and Prove Baye's theorem 7M

OR

2. a) A random variable X has the following probability distribution:

x:	0	1	2	3	4	5	6	7
p(x):	0	K	2k	2k	3k	k^2	$2k^2$	$7k^2+k$

Find $k, P(X < 6), P(X \geq 6), P(0 < X < 5)$ and find a value if $P(X \leq a) > \dfrac{1}{2}$ 7M

    b) A continuous random variable X has a probability density function

$$f(x) = \begin{cases} \dfrac{(x+1)}{2}, & -1 \leq x \leq 1 \\ 0, & \text{elsewhere} \end{cases}$$ represents the density of a random variable X, then

find $P(X \leq 0)$, mean and variance. 7M

UNIT–II

3. a) The number of telephone lines busy at an instant of time is a binomial variate with probability 0.2. If at an instant 10 lines are chosen at random, what is the probability that (i) 5 lines are busy, (ii) at most 2 lines are busy (iii) all lines are busy 7M

    b) Fit a Poisson distribution to the frequency distribution.

x:	0	1	2	3	4
f:	122	60	15	2	1

7M

OR

4. In a normal distribution, 7% are under 35 and 89% are under 63. Find the mean and the standard deviation of the distribution. 14M

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) A random sample of 100 factory workers in a large city revealed a mean weekly earnings of Rs. 487 with a standard deviation of Rs. 48. With what level of confidence can we assert that the average weekly salary of all factory workers in in the cit is between Rs. 472 and Rs. 502?　　　7M

　b) The mean and standard deviation of marks scored by a sample of 100 students are 67.45 and 2.92. Find (i) 95% and (ii) 99% confidence intervals for estimating the mean marks of the student population.　　　7M

UNIT–IV

7. Random samples of 400 men and 600 women were asked whether they would like to have a flyover near their residence. 200 men and 325 women were in favour of the proposal. Test the hypothesis that proportions of men and women in favour of the proposal are same, at 5% level　　　14M

OR

8. a) In a sample of 1,000 people in Karnataka 540 are rice eaters and the rest are wheat eaters. Can we assume that both rice and wheat are equally popular in the state at 1% level of significance　　　7M

　b) The heights of 10 males of a given locality are found to be 70, 67, 62, 68, 61, 68, 70, 64, 64, 66 inches. Is it reasonable to believe that the average height is greater than 64 inches? Test at 5% significance level assuming that for 9 degrees of freedom　　　7M

UNIT–V

9. The measurements of the output of two units have given the following results. Assuming that both samples have been obtained from the normal populations at 10% significant level, Test whether the two populations have the same variance

Unit-A	14.1	10.1	14.7	13.7	14.0
Unit-B	14.0	14.5	13.7	12.7	14.1

14M

OR

10. A pair of dice are thrown 360 times and the frequency of each sum is indicated below:

Sum	2	3	4	5	6	7	8	9	10	11	12
Frequency	8	24	35	37	44	65	51	42	26	14	14

Would you say that the dice are fair on the basis of the chi-square test at 0.05 level of significance?　　　14M

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