Code: 4GC42

R-14

II B.Tech. II Semester Supplementary Examinations August 2021
Probability & Statistics
(Common to CE, ME and IT)

Max. Marks: 70   Time: 3 Hours
Answer *any five* full questions by choosing one question from each unit (5x14 = 70 Marks)
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UNIT–I

1. a) Define the following (i) Sample Space (ii) event (iii) Outcome (iv) Probability   8M

   b) Two marbles are drawn in succession from a box containing 10 red, 30 white, 20 blue and15 orange marbles, with replacement being made after each drawing. Find the probability that (i) both are white (ii) first is red and second is white.   6M

OR

2. a) State and prove Addition theorem on probability for two events.   8M

   b) If two dice are throw , Find the probability of getting a sum is10   6M

UNIT–II

3. A random variable X has the following probability function

X	0	1	3	4	5	6	7
P(X)	0	K	2K	2K	3K	K^2	$7K^2+K$

Find the value of K , (ii)Evaluate $p(0 < x < 5)$, (iii) Evaluate $p(x < 5)$ 14M

OR

4. The mean and variance of a binomial variable X with parameters n and p are 16 and 8. Find P(x 1) and P(x > 2)   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. It is desired to estimate the mean number of hours of continuous use untila certain computer will first require repairs. If it can be assumed that † =48 hours, how large abe needed so that one will be able to assert with 90% confidence that the sample mean is off by at most 10 hours.   14M

UNIT–IV

7. a) A sample of 64 students has a mean weight of 70 kg. can this be regarded as a sample from a population with mean weight 56kg. and standard deviation is 25 kg.   7M

   b) In a big city, 325 men out of 600 men were found to be smokers. Thus this information supports the concussion that the majority of men in the city are smokers.   7M

OR

8. According to the norms established for a mechanical aptitude test, persons who are 18 years old have an average height 73.2 (~ = 73.2) with standard deviation of 8.6(† = 8.6). If 45 ($n = 45$) members randomly selected of that age average 76.7($\bar{x} = 76.7$). Test the null hypothesis ~ = 73.2, against the alternative hypothesis ~ > 73.2 at the 0.01 level if significance.   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 = 0.05   14M

OR

10. 4 coins were tossed 160 times and the following results were obtained,

No, of Heads	0	1	2	3	4
Frequency	17	52	54	31	6

Under the assumption that coins are unbiased, find the expected frequencies of 0,1,2,3,4 heads and test the googness of fit for =0.05   14M

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R-14

Code: 4G144

II B.Tech. II Semester Supplementary Examinations August 2021
Object Oriented Programming through Java
(Common to CSE & IT)

Max. Marks: 70 Time: 3 Hours
Answer *any five* full questions by choosing one question from each unit (5x14 = 70 Marks)
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UNIT–I

1. a) Explain the three OOPs principles briefly with examples. 7M
   b) Explain features of Java in brief. 7M

OR

2. a) What is an array? Write a Java program to print upper triangle values of a given two dimensional array. 7M
   b) Illustrate method overloading in Java. 7M

UNIT–II

3. a) Explain the keywords this, static, super and final with one example each. 7M
   b) How do you achieve multiple inheritance in java? Give Example. 7M

OR

4. a) How to call super class constructor using derived class? Explain. 7M
   b) Define interface. Write a java program to implement interface. 7M

UNIT–III

5. a) With suitable program explain multiple catch clauses. 7M
   b) Explain thread life cycle in detail 7M

OR

6. What is an Exception? List out the keywords for exception handing and write steps to develop user defined exception. 14M

UNIT–IV

7. a) With suitable example explain StringTokenizer. 7M
   b) Describe the window fundamentals. 7M

OR

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

UNIT–V

9. a) Describe the delegation event model. 7M
   b) Briefly explain Components and Containers. 7M

OR

10. a) Write a java program to handle keyboard events. 7M
    b) Explain MVC architecture in swings. 7M

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