| Hall Ticket Number : | | | | | | | | | | |
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**R-11 / R-13**

**Code: 1GC42**

II B.Tech. II Semester Supplementary Examinations May 2019

# Probability & Stastics

( Common to CE, ME & IT )

Max. Marks: 70 Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks** each)

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1. a) Find the mean, median and mode for the following distribution.

| x | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 |
|---|---|---|---|---|---|---|---|---|---|
| y | 2 | 22 | 19 | 14 | 3 | 4 | 6 | 1 | 1 |

6M

b) Find the rank correlation coefficient for the following data

| x | 5 | 2 | 8 | 1 | 4 | 6 | 3 | 7 |
|---|---|---|---|---|---|---|---|---|
| y | 4 | 5 | 7 | 3 | 2 | 8 | 1 | 6 |

8M

2. a) Box A contain 5 red and 3 white marbles and box B contains 2 red and 6 white marbles. If marble is drawn from each box, what is the probability that they are both of same colour. 7M

b) State and prove Baye's theorem. 7M

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

| X | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| P(X) | K | 2K | 3K | 4K | 5K | 6K | 7K | 8K |

Find K and $P(2 \le X \le 5)$. 7M

b) If a random variable has the probability density function

$$f(x) = \begin{cases} k\left(x^2 - 1\right), & -1 \le x \le 3 \\ 0, & \text{elsewhere} \end{cases}$$ find $k$ and $P\left(\frac{1}{2} \le x \le \frac{5}{2}\right)$. 7M

4. a) If a Poisson distribution is such that $P(X=1).\frac{3}{2} = P(X=3)$, find $P(X \ge 1)$ and $P(X \le 3)$. 7M

b) In a Normal Distribution, 7% of the items are under 35 and 89% are under 63. Determine the mean and variance of the distribution. 7M

5. A population consists of five numbers 2, 3, 6, 8, 11. Consider all samples of size two which can be drawn without replacement from this population.

Find (a) Population mean

(b) Population Standard deviation

(c) Mean of the sampling distribution of means

(d) Standard deviation of the sampling distribution of means. 14M

6. a) A random sample of size 100 has a standard deviation of 5. What can you say about the maximum error with 95% confidence? 7M

b) A sample of 11 rats from a central population had an average blood viscosity of 3.92 with a standard deviation of 0.61. Estimate the 95% confidence limits for the mean blood viscosity of the population. 7M

7. a) An ambulance service claims that it takes on the average less than 10 minutes to reach its destination in emergency calls. A sample of 36 calls has a mean of 11 minutes and the variance of 16 minutes. Test the claim at 0.05 level of significance. 7M

   b) An average breaking strength of steel rods is specified to be 18.5 thousand pounds. To test this sample of 14 rods were tested. The mean and standard deviations obtained were 17.85 and 1.955 respectively. Is the result of experiment significant? 7M

8. 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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| Hall Ticket Number : | | | | | | | | | | |
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**R-11 / R-13**

**Code: 1G145**

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 any **five** questions
All Questions carry equal marks (**14 Marks** each)

*********

| | | | |
|---|---|---|---|
| 1. | a) | What is Object oriented paradigm? Explain any three object oriented programming features? | 7M |
| | b) | List out and explain Java Integer and Floating point data types? | 7M |
| 2. | a) | Define class and object? Explain the general form of a class with an example? | 8M |
| | b) | Briefly explain java's access specifiers? | 6M |
| 3. | a) | Differentiate between classes and interfaces? | 7M |
| | b) | How Interfaces can be extended? Explain with an example? | 7M |
| 4. | | Write a java program to create a thread<br>i) By extending Thread class<br>ii) By implementing Runnable interface. | 14M |
| 5. | a) | Explain Delegation event model. | 7M |
| | b) | Explain any two event classes. | 7M |
| 6. | | Write a Java applet program to draw lines, rectangles, squares, circles and ovals. | 14M |
| 7. | a) | Explain MVC architecture. | 7M |
| | b) | Explain JLabel and JButton. | 7M |
| 8. | | Write a Java program to implement a simple client/server communication using client and server sockets. | 14M |

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