

Roll No.:

SGT UNIVERSITY

END TERM THEORY EXAMINATION JULY-2022

Faculty/College of Study:	Engineering & Technology	Year/Semester:	6 th Semester
Program:	B.Tech. (CSE) Gen.	Duration:	03:00 Hrs
Course/Subject:	Probability & Statistics	Maximum Marks:	60
Course/Subject Code:	13020604	Batch:	2016

Instructions:-

1. Write Your Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided correct question paper. Complaint(s) in this regard, if any should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
3. All Questions are compulsory. Marks are indicated against each question.
4. Illustrate your answer with diagram wherever required.

SECTION-A

(Very Short Answer Type Questions)

Note: All Questions are compulsory: -

[12X1=12 Marks]

S. No.	Question	Marks Allotted
1	The mean and variance of a binomial distribution are 12 and 6, respectively. Then, $P(X = 2)$ is equal to:	1
2	Define parametric test.	1
3	The range of test statistic Z is	1
4	What is the value of total probability?	1
5	Short note on mean.	1
6	What is the mean and variance of the Poisson distribution.	1
7	Give one example of continuous distribution?	1
8	In the regression line $Y = a + bX$, b is called the?	1
9	What is correlation?	1
10	If $\rho = 0$, the angle between the two lines of regression is?	1
11	If A and B are two events, the probability of occurrence of either A or B is given by?	1
12	In tossing three coins at a time, the probability of getting at most two head is?	1

SECTION-B
(Short Answer Type Questions)

Note: All Questions are compulsory: -

[4X2=8 Marks]

S. No.	Question	Marks Allotted
13	A random variable X has 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 +9 What is the value of k?	2
14	A bag contains 7 white, 6 red and 5 black balls. Two balls are drawn at random. Find the probability that they will both be white.	2
15	What is the probability of a leap year selected at random contain 53 Monday.	2
16	Find the probability that at the most 5 defective fuses will be found in a box of 200 fuses if experience shows that 2% of such fuses are defective.	2

SECTION-C
(Descriptive Answer Type Questions)

Note: All Questions are compulsory: -

[4X4=16 Marks]

S. No.	Question	Marks Allotted
17	Discuss discrete distribution and its chief characteristics.	4
18	Short note on the exponential distribution.	4
19	Calculate the correlation coefficient between x and y using the following data: X 1 2 3 4 5 6 7 8 9 Y 7 6 8 10 9 11 12 14 13	4
20	A certain cubical die was thrown 9000 times and 2 or 3 was obtained 3240 times. On the assumption of certain throwing, do the data indicate an unbiased die?	4

SECTION-D

(Long Answer Type Questions)

Note: All Questions are compulsory: -

[4X6=24 Marks]

S. No.	Question	Marks Allotted
21	A random sample of 1200 member has a mean 3.4 cms. Can it reasonably regarded as a sample from a large population of mean 3.2 cms and S.D. 2.3 cms.	6
22	Calculate the correlation coefficient for the following heights (in inches) of fathers (x) and their sons (y). X 45 46 47 47 48 49 50 52 Y 47 48 45 48 52 52 49 51	6
23	Obtain the rank correlation coefficient for the following data: X 65 54 65 30 45 58 54 40 54 70 Y 58 71 58 38 40 52 60 35 48 50	6
24	Fit a straight line to the following data: X 0 1 2 3 4 Y 1 1.8 1.3 2.5 6.3	6