K19P 1398

to the

PART-D

Answer any Two questions. Each question carries 10 marks. (2×10=20)

26.
$$A = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$$
 Check whether the inverse of A exists. If exists, find A^{-1}

- 27. Prices of shares of a company on different days in a month were found to be 66,65,69,70,69,71,70,63,64,68. Discuss whether mean price of the shares in the month is 65.
- 28. Define Poisson distribution. Explain the characteristic properties and applications of Poisson distribution.
- 29. Discuss the important Steps involved in hypothesis testing.

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Na	me:			(CCC VILLERARY)	
			n, Octob ission (MICS/ I	per - 2019	
Ti	me :	3 Hours		Max. Marks :	6
		P/	ART - A		
1.		swer all the Eight questions. square matrix A = A ² , then A Symmetric Idempotent		estion carries ½ mark. (8×½= be. Skew Symmetric Nilpotent	=4
2.	If A is a singular matrix, then adj A is.				
	a)	Non Singular	b)	Singular	
	c)	Symmetric	d)	Not defined	
3.		meaning) can be formed out of of letters is not allowed.	th		
	a)	40	b)	120	
	c)	90	d)	360	
4.	Which of the following is a discrete probability distribution.				
	a)	Binomial distribution	b)	Normal distribution	
	c)	Lognormal distribution	d)	None of the above	
5.	Probability of committing type I error is known as.				
	a)	Power of the test	b)	Degrees of freedom	
	c)	Level of significance	d)	None of the above	

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- 6. Which of the following is a criterion for a good estimator.
 - a) Efficiency

b) Unbiasedness

c) Consistency

- d) All of the above
- A random variable X takes values 1,2,3,4,5,6 with corresponding probabilities
 ½, ½, ½, ½, ½
 What is the expectation of X.
 - a) 6/21

b) 21/6

c) 9/21

- d) 21/9
- 8. When a coin is tossed , two events of getting Head and getting Tail are:
 - a) Mutually exclusive
- b) Exhaustive events
- c) Equally likely events
- d) All of the above

PART-B

Answer any Eight questions. Each question carries Two marks. (8x2=16)

- 9. Define the following
 - a) Symmetric matrix
 - b) Skew symmetric matrix
- 10. Briefly explain with examples.
 - a) Minor
 - b) Cofactor
- 11. Distinguish between point estimate and interval estimate.
- 12. Calculate values of the following
 - a) 4P2
 - b) 10 C7
- 13. Distinguish between mutually exclusive and exhaustive events.
- 14. Explain the parameters and probability density function of binomial distribution.
- 15. State central limit theorem.

- 16. Distinguish between one tailed and two tailed test.
- 17. Discuss the major applications of F test
- 18. Briefly explain conditional probability with an example.
- Distinguish between discrete random variable and continuous random variable.

PART-C

Answer any Four questions. Each question carries Five marks. (4x5=20)

20. Prove that
$$\begin{vmatrix} b^2 + c^2 & ab & ac \\ ba & c^2 + a^2 & bc \\ Ca & Cb & a^2 + b^2 \end{vmatrix} = 4 a^2 b^2 c^2$$

- 21. A bag contains 6 white marbles and 5 red marbles. Find the number of ways in which four marbles can be drawn from the bag if,
 - a) Two must be white and two must be red
 - b) They must be of the same colour
- 22. Three persons A, B, C are simultaneously shooting a target. Probability of A hitting the target is ¼ and that of B is ½ and that of C is ¾. Find the probability that
 - a) Exactly one of them will hit the target
 - b) At least one of them will hit the target.
- 23. The standard deviation of two samples of Sizes 10 and 14 from two normal populations are 3.5 and 3 respectively. Examine whether the standard deviations of the population are equal.
- 24. Distinguish between estimate and estimator. Also explain the desirable properties of a good estimator.
- 25. What is lognormal distribution? Examine the important applications of lognormal distribution in economics.