Course Code: MSCM103TInstructions:1. All questions are compulsory. 2. Assume missing data suitably, if any.SECTION-A (15 Marks)5 MarksSECTION-A (15 Marks)5 Marks1. Define Poisson distribution & F-test.KL 12. Define mean and variance of binomial distributionKL 1SECTION-B (40 Marks)KL 1SECTION-B (40 Marks)10 Marks4. Solve for mean and standard deviation of the distribution.KL 25. In a binomial distribution for n=55 if $P(x=1)=0.4096 & P(x=2)=0.2048$. KL 3Solve for p.A random sample of size 16 has 53 as mean. The sum of squares of the deviation from mean is 135. Evaluate 95% and 99% confidence limits of the mean of the population.KL 3If X has a chi-square distribution with n degree of freedom, solve for moment generating function.	inted Page	es:01		
Summer Term Examination – July - August 2024 [Programme: M.Sc.] [Semester: II) [Batch:] Course Title: Mathematical Statistics M Course Code: MSCM103 I. All questions are compulsory. 2. Assume missing data suitably, if any. K Level SECTION-A (15 Marks) 5 Mark 1. Define Poisson distribution & F-test. KL 1 2. Define mean and variance of binomial distribution KL 1 3. (4, 8), (8, 7). SECTION-B (40 Marks) 10 Mark 4. Solve for mean and standard deviation of the distribution. KL 2 5. In a binomial distribution, 31% of the items are under 45 and 8% are over 64. Solve for mean and standard deviation of the distribution. KL 2 6. In a binomial distribution for n=55 if $P(x=1) = 0.4096 & P(x=2) = 0.2048$. Solve for p. A random sample of size 16 has 53 as mean. The sum of squares of the deviation from mean is 135. Evaluate 95% and 99% confidence limits of the mean of the population. KL 3 6. deviation from mean is 135. Evaluate 95% and 99% confidence limits of the mean of the population. KL 3 7. generating function. SECTION-C (45 Marks) 15 Mark <t< th=""><th></th><th></th></t<>				
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8. distribution with unknown mean μ and variance σ^2 . Discuss the maximum KL 4				
	CO 3	15		
	distribution with difficient in modification of a bisouss the maximum			
Prove that $r = \frac{\sigma_x^2 + \sigma_y^2 - \sigma_{x-y}^2}{2\sigma_x\sigma_y}$, where r is the coefficient of correlation KL 5 CO 3 15				
9. $2\sigma_x\sigma_y$ KL 5 between x and y σ_x , σ_y and σ_z are concerned standard deviations.		13		
Design the observed and expected frequencies of $2x2$ contingency table				
12 15				
10 12 15 KL 6	CO 3	15		
6 2				

Course outcomes:		Students will be able to
COs	K level	
CO1		
CO2		
CO3		
CO4		

Note: 1. Q1to Q4from K1/K2.

- 2. Q5to Q8from K3/K4.
- 3. Q9to Q10from highest knowledge level.