BCA DEGREE (CBCS) EXAMINATION, NOVEMBER 2018

Third Semester

Bachelor of Computer Applications

COMPLEMENTARY COURSE - ST3CMT32 - ADVANCED STATISTICAL METHODS

2017 Admission Onwards

B4506CAE

Maximum Marks: 80 **Time: 3 Hours**

Part A

Answer any **ten** questions.

Each question carries **2** marks.

1. What is the relation between mean and variance of Poisson distribution

2. Write down the mgf of $U(a,b)$

3. What is the value of Z when the area under the normal curve is 0.5?

4. Define sampling

5. How chi-square tables are prepared?

6. What is the relation between chi-square and F variable?

7. What are the branches of statistical inference?

8. Write down a 90% confidence limits for population mean for a given sample mean and sample SD

9. What is the standard error of proportion for $p=0.1$ and $n=100$?

10. Define statistical hypothesis

11. What is a contingency table?

12. How will you calculate expected frequencies.

(10×2=20)

Part B

Answer any **six** questions.

Each question carries **5** marks.

13. An unbiased die is thrown.Let X denote the numbr thrown .Find the mean and variance of X

14. For a Binomial distribution with n=6, the third term is nine times the fifth term. Find p

15. The weekly wages of 1000 work men are normally distributed with a mean of 70 and SD of 5. Estimate the number of workers whose wages will be between 69 and 72.

16. State the conditions under which t distribution is applied

17. List out the uses of F distribution

18. Explain the method of maximum likelihood estimation

19. A random sample of 100 articles selected from a batch of articles shows an average diameter of 0.354 with SD=0.048. Find a 95% confidence interval for the average of this batch of articles.

20. Of 500 people selected at random from a town 275 are drinkers of tea and others are drinkers of coffee. On the basis of these findings can you conclude that tea and coffee are equally popular in that town

21. How will you test the mean of a normal population when we are dealing with a small sample

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Explain area property of Normal distribution. What is standard Normal Distribution? What is standard Normal table?

23. Obtain the sampling distribution of mean and variance for a normal population

24. Explain point estimation with examples

25. In a cross between red flowered and the white flowered plants, it was found that of the 452 flowers obtained 119 were white and the rest red. Is this consistent with the hypothesis that red and white flowers are in the ratio 3:1.

(2×15=30)