



QP CODE: 24027833



24027833

Reg No : .....

Name : .....

**BCA DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE  
EXAMINATIONS, OCTOBER 2024**

**Third Semester**

Bachelor of Computer Applications

**COMPLEMENTARY COURSE - ST3CMT32 - ADVANCED STATISTICAL METHODS**

2017 Admission Onwards

D89F1D0D

Time: 3 Hours

Max. Marks : 80

**Part A**

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What are the parameters of Normal distribution?
2. What is a standard normal variable ?
3. What are the conditions under which Binomial distribution tends to Poisson distribution?
4. Define sampling.
5. State central limit theorem.
6. Define Fdistribution.
7. Define estimation.
8. Define confidence level.
9. What are properties possessed by M.L. estimators?
10. Define type II errors.
11. Give an example of a large sample test.
12. Write notes on small sample test.

(10×2=20)

**Part B**

*Answer any **six** questions.*

*Each question carries **5** marks.*





13. In a Binomial distribution consisting of 5 independent trials, first and second terms are 0.4096 and 0.2048 respectively. Find the parameter  $p$ .
14. If a random variable  $X$  follows a Poisson distribution such that  $P(X=1)=P(X=2)$ . Find  $P(X=0)$ .
15. Obtain the mean, variance and mgf of continuous uniform distribution.
16. What are the uses of  $t$  distribution?
17. Write down the relation between chi-square and  $F$  distribution.
18. Explain the criteria for a good estimator.
19. A random sample of 16 has mean 53. the sum of the squares of the deviations taken from the mean is 150. Obtain a 95 % confidence interval for the population mean.
20. Explain chi-square test as a non parametric test.
21. Explain the procedure of testing goodness of fit.

(6×5=30)

### Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Obtain the mean, variance and mgf of Bernoulli distribution.
23. Explain chi -square distribution by pointing out its applications.
24. Derive the confidence interval for true value of proportion of binomial population.
25. It is claimed that more IAS selections are made from cities rather than rural places. On the basis of the following data do you uphold the claim.

	Selected	Not selected
From Cities	500	200
From rural places	100	30

(2×15=30)

