QP CODE: 19102260

BCA DEGREE (CBCS) EXAMINATION, OCTOBER 2019

Third Semester

Bachelor of Computer Applications

COMPLEMENTARY COURSE - ST3CMT32 - ADVANCED STATISTICAL METHODS

2017 Admission Onwards

CE440935

Maximum Marks: 80

Part A

Answer any ten questions. Each question carries 2 marks.

- 1. Write down the probability function of Bernoulli distribution for p=0.6.
- 2. Define continuous uniform distribution.
- 3. What are the conditions under which Binomial distribution tends to Poisson distribution?
- 4. What are large and small samples?
- 5. Wha is the variance of t distribution?
- 6. Define F distribution?
- 7. What is an estimate?
- 8. What are the branches of statistical inference?
- 9. Obtain 95% confidence interval for population proportion in sampling from binomial population.
- 10. Define simple hypothesis.
- 11. Write notes on small sample test.
- 12. Write down the test statistic for testing equality of mean when population SD's are known.

 $(10 \times 2 = 20)$

Part B

Answer any six questions. Each question carries 5 marks.

13. 3% of defective bulbs manufactured by a company are defective, find the probability that in a sample of 100 bulbs exactly five bulbs are defective .

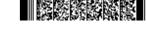
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Time: 3 Hours







- 14. The height of the school children is normally distributed with mean of 54 inches and SD of 12 inches. What proportion of students have height between 46 and 56 inches?
- 15. In a Normal distribution 17% of the items are below 30 and 17% of the items are above 60. Find the mean & Standard deviation.
- 16. Derive the sampling distribution of means of samples chosen from a normal population.
- 17. Write down the pdf of chi-square distribution.
- 18. Derive a 95 % Confidence interval for the mean of a normal population.
- 19. Obtain the mle of population mean in Poisson population.
- 20. What are the uses of chi-square test?
- 21. What are the conditions for applying chi-square test?

(6×5=30)

Part C

Answer any **two** questions. Each question carries **15** marks.

- 22. The incidence of occupational disease in an industry is such that the workers have 20% chance of suffering from it. Five workers are chosen at random. Find the probability that (i) None (ii) Exactly 2 (iii)At least 3 of them would be suffering from the disease.
- 23. Write down the inter relation ships between various sampling distributions.
- 24. How will you calculate confidence interval for mean of a normal population .. Explain.
- 25. Apply suitable test to examine whether the following figures provide evidence of the effectiveness of innoculation.

	Attacked	Not attacked
Innoculated	20	300
Not innoculated	80	360

(2×15=30)