



22103083

QP CODE: 22103083

Reg No :

Name :

**BBA DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE
EXAMINATIONS, OCTOBER 2022**

Second Semester

Bachelor of Business Administration

Complementary Course - BA2CMT09 - STATISTICS FOR MANAGEMENT

2017 ADMISSION ONWARDS

91048384

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Explain independent and dependent events.
2. *If $P(A) = 0.3$, $P(B) = 0.6$ and A and B are independent. Find $P(A' \cap B)$.*
3. What do you mean by continuous random variable ?
4. If Mean = 4 and Variance = $\frac{4}{3}$ for a Binomial distribution .Find p
5. Comment on the following .For a Poisson distribution Mean = 8 and Variance = 9 .
6. What is standard normal distribution
7. Distinguish between small sample and large sample
8. define multistage sampling
9. Distinguish between statistic and parameter
10. Define Type 1 error
11. How do you calculate the degrees of freedom of chi-square test of independence?
12. Mention any two limitations of chi-square test.

(10×2=20)

Part B





Answer any **six** questions.
Each question carries **5** marks.

13. If $P(A) = 0.3$ $P(B) = 0.2$, $P(A \cap B) = 0.1$ find the probabilities of
1. At least one of the events occurs.
 2. Exactly one of the events occurs.
 3. None of the events occur
14. If A and B are independent then show that (1) A and B' are independent (2) A' and B are independent (3) A' and B' are independent
15. Define random variable .Give an example
16. A random variable X takes values $0, 1, 2, 3, 4$, with probabilities $1/4, 1/5, 2/5, 1/8, 1/40$. Find $E(x)$ and $V(x)$
17. What are the properties of $V(x)$
18. What are the main sampling distributions used in the statistical inference
19. What is the importance of central limit theorem in statistics
20. Explain how you will test the given population mean when population SD is unknown.
21. Explain with example any two uses of chi-square test.

(6×5=30)

Part C

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

22. State Baye's theorem.
- The probability that a doctor will diagnose a particular disease correctly is 0.6. the probability that a patient will die by his treatment after correct diagnosis is 0.4 and the probability of death by wrong diagnosis is 0.7. A patient of the doctor who had the disease died. What is the probability that his disease was not correctly diagnosed?
23. A random variable X has the following probability distribution .

x	1	2	3	4	5	6
P(x)	K	2K	2K	3K	4K	K

Find 1) Value of K 2) $P(X < 4)$ 3) $P(X > 4)$





24. A manufacturer of light bulbs claims that on the average 2% or less of all the light bulbs manufactured by his firm are defective. A random sample of 400 bulbs contained 13 defective bulbs. On the evidence of this sample, do you support the manufacturer's claim. Why?
25. (a) How do you use chi-square test for testing goodness of fit?
(b) In an experiment on pea breeding Mendel obtained the following frequencies of seeds: 315 round and yellow, 101 wrinkled and yellow, 108 round and green, 36 wrinkled and green. Theory predicts that the frequencies should be in the proportion 9 : 3 : 3 : 1. Examine the correspondence between theory and experiment.

(2×15=30)

