

**BBA DEGREE (CBCS) EXAMINATION, MAY 2019****Second Semester**

Bachelor of Business Administration

Complementary Course - **BA2CMT09 - STATISTICS FOR MANAGEMENT**

2017 ADMISSION ONWARDS

88AC8360

Maximum Marks: 80**Time: 3 Hours****Part A**Answer any **ten** questions.Each question carries **2** marks.

- The probability that a boy will get scholarship is 0.9 and a girl will get is 0.8. What is the probability that at least one of them will get the scholarship?
- If $P(A) = 0.2$, $P(B) = 0.3$ and A and B are independent. Find $P(A/B)$ and $P(B/A)$.

- Check whether the following is a probability distribution

x	-2	-1	0	2
f(x)	1/8	2/8	3/8	2/8

- Define discrete random variable
- Four coins are tossed simultaneously. What is the probability of getting 2 heads ?
- Define variance of a random variable X .
- Distinguish between statistic and parameter
- Define sampling distribution
- State central limit theorem
- Define null hypothesis
- Give any two use of chi-square test.
- Mention any two limitations of chi-square test.

(10×2=20)

Part BAnswer any **six** questions.Each question carries **5** marks.

- Define axiomatic approach to probability and state two of its limitations.





14. State and prove addition theorem for two events.
15. Define random variable .Give an example
16. Define Poisson distribution . Write any 2 properties of this distribution .
17. If X and Y are two independent variates with $E (X) = 3$, $E (Y) = 2$.
Find 1) $E (3X)$
2) $E (2X + 5Y)$
18. What is the difference between simple random sampling and stratified sampling
19. Define standard error with examples
20. What do you understand by statistical test of hypothesis? Explain
21. Out of a sample of 120 persons in a village, 76 persons were administered a new drug for preventing influenza and out of them 24 persons were attacked by influenza. Out of those who were not administered a new drug , 12 persons were affected by influenza. Prepare (a) 2x2 contingency table showing the actual and expected frequencies. (b) Use chi-square test for finding out whether the new drug is effective or not.

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. State Baye's theorem.
There are three urns having the following composition of black and white balls (i) 7 white and 3 black balls (ii) 4 white and 6 black balls (iii) 2 white and 8 black balls. One of these urns is chosen at random with probabilities 0.20, 0.60, and 0.20 respectively. From the chosen urn two balls are drawn at random without replacement. Calculate the probability that both these balls are white.
23. 1)Write down the properties of Normal distribution . 2) What are the area properties of Normal distribution ? 3) What are standard normal distribution and standard normal variate z .
24. (a) A sample of 100 students is taken from a large population.The mean height of these students is 64 inches and the standard deviation 4 inches. Can it reasonably be regarded that in the population ,mean height is 66 inches.
(b) Derive the expression for the standard error of mean of a sample of size n if the population SD is known and if it is unknown.
25. (a) What is chi-square test and what are its conditions?
(b) A sample analysis of an examination result of 200 students were made.It was found that 46 students had failed, 68 secured III class, 62 scored II class, and the rest were placed in the first division.Are these figures are in agreement with the general examination results which is in the ratio 2: 3: 3 : 2. for various categoris respectively.(significance level $\alpha =0.01$)

(2×15=30)

