MMS/D-16
BUSINESS STATISTICS
PAPER-CP-102

Time Allowed: 3 Hours Maximum Marks: 70

Note: Attempt any eight questions from Part- A and any three from Part-B. Each question of Part-A carries 5 marks and part-B 10 marks.

Part-A

1. A problem in statistics is given to three students A, B and C whose chances of solving it are 1/3,1/4 and 1/5 respectively. Find the probability that the problem will be solved if all try independently.

2. Find the probability of throwing 6 at least once in six throws with a single die.

3. Out of the numbers 1 to 120, one is selected at random. What is the probability that it is divisible by 8 or 10.

4. The mean of a binomial distribution is 4 and its standard deviation is 3. What are the values of n, p and q.

5. State the conditions under which binomial distribution and Poisson distribution are used.

6. Give the salient features of a normal distribution. Write its probability function.

7. What is a small survey? In what respect is it superior to a census survey?

8. State and explain :
   (a) Law of Statistical Regularity
   (b) Law of Inertia of Large Numbers.

9. Outline the procedure for large sample tests and discuss their theoretical basis.

10. Bringout the role of SPSS in data analysis.

Part-B

11. Explain the following concepts with examples :

(a) Multiplicative Probability Rule
(b) Baye's Theorem
(c) Sampling Distribution.

12. Explain with example application of following statistical tests :
    (a) t-test (b) f-test
    (c) Sign Tests (d) Chi-square tests

13. Two researchers adopted different sampling techniques while investigating the same group of students to find the number of students falling in different intelligence levels. The results are as follows:

Researcher	No. of students in each level				
	Below Average	Average	Above Average	Genius	Total
X	86	60	44	10	200
Y	40	33	25	2	100
Total	126	93	69	12	300

Would you say that the sampling techniques adopted by the two researchers are significantly different?

14. A daily sample of 30times was taken over a period of 14 days in order to establish attributes control limits. If 21 defectives ware found, what should be the upper and lower limits of the proportion of defectives?

15. Write short notes on :
    (a) Acceptance Sampling
    (b) Point and Interval estimation of Population Mean
    (c) Non-sampling errors
    (d) Sampling Errors
    (e) Simple Random Sampling Technique.