



QP CODE: 24801169



Reg No : .....

Name : .....

**INTEGRATED MSC DEGREE EXAMINATION, FEBRUARY 2024**

**First Semester**

INTEGRATED MSC BASIC SCIENCE-STATISTICS

**CORE - IST1CR02 - BASIC STATISTICS**

2020 Admission Onwards

C7E71622

Time: 3 Hours

Weightage: 30

**Part A (Short Answer Questions)**

Answer any **eight** questions.

Weight 1 each.

1. What is one way table and two way table?
2. What is relative frequency distribution?
3. Define a cartogram.
4. Define Arithmetic mean.
5. Define Median.
6. Calculate the mode of the distribution of values 5,7,9,9,85,6,8,7,7,5,7,9,2,7
7. What are the demerits of Range?
8. How to find the range for frequency data? Also find the range for the following data.

Class	5-15	15-25	25-35	35-45
Frequency	5	15	12	4

9. If the second and fourth moments of a distribution are 54 and 8327 respectively. Find coefficient of skewness.
10. The first four moments about 2 of a distribution are 1, 2.5, 5.5 and 16. Comment on the kurtosis

(8×1=8 weightage)

**Part B (Short Essay/Problems)**

Answer any **six** questions.

Weight 2 each.

11. What you mean by primary data and secondary data? What are the advantages of primary data over secondary data?





12. What are ogives? How they are constructed?
13. Explain measures of central tendency.
14. The arithmetic mean of two numbers is 10 and their geometric mean is 8. Find the numbers.
15. Calculate mean deviation for the following data:

Class	0-10	10-20	20-30	30-40	40-50
Frequency	5	12	14	16	8

16. The time taken (in minutes) to complete a homework by 8 students in a day are given by 38,40,47,44,46,43,49,53. Find the coefficient of variation.
17. Derive the expression for  $r^{\text{th}}$  central moment in terms of raw moments and obtain first 4 central moments
18. Explain Karl Pearson's and Bowley's measure of skewness.

(6×2=12 weightage)

### Part C (Essay Type Questions)

Answer any **two** questions.

Weight 5 each.

19. What is sampling? What are the characteristics of a good sample? How sampling is different from census? Write down the advantages and disadvantages of sampling and census.
20. a) The mean weight of 8 girls in a group is 35 kg. The individual weights of seven of them are 35 kg, 28 kg, 43 kg, 25 kg, 33 kg, 51 kg and 22 kg. Find the weight of the eighth girl.  
b) The mean of 100 items was found to be 64. Later on it was discovered that two items were misread as 26 and 9 instead of 36 and 90 respectively. Find the correct mean.
21. Calculate Quartiles and  $P_{30}$  and  $P_{75}$  for the data:

Class	30-35	35-40	40-45	45-50	50-55	55-60	60-65
f	10	16	18	27	18	8	3

22. What is Kurtosis? Give sketches for different types of kurtosis? Explain quartile and moment measures of kurtosis? Define Pearsonian coefficient gamma 2 and discuss its utility in Statistics.

(2×5=10 weightage)

