

FIRST SEMESTER (CUFYUGP) DEGREE EXAMINATION
NOVEMBER 2025

Applied Statistics With Data Science/Statistics

STA1FM105(2)—FUNDAMENTALS OF STATISTICS

(2024 Admission onwards)

Time : One Hour and a Half

Maximum : 50 Marks

Section A

*All questions can be answered.
 Each question carries 2 marks.
 (Ceiling 16 marks)*

1. What are the two ways in which statistics can be defined ?
2. Define primary data with an example.
3. (i) Which average is suitable for nominal data ?
 (ii) Which is the most suitable measure of central tendency while dealing with qualitative data ?
4. The mean of 100 observations was found to be 30. At the time of calculation two observations were wrongly taken as 32 and 12 instead of 23 and 11. Compute the correct value of mean.
5. Define frequency distribution. What is open- ended frequency distribution ?
6. (i) If the first quartile, median and third quartiles of a distribution are respectively 12, 30 and 38, what is quartile deviation ?
 (ii) Which average gives the least value of mean deviation ?
7. State any two advantages of diagrams and graphs for representing statistical data.

Turn over

8. (i) What is the range of the observations 32, 14, 36, 71, 11, 40 ?
 (ii) In a histogram with equal class intervals, heights of bar is proportional to _____.
 9. What is pie chart ?
 10. Define kurtosis. What is leptokurtic curve ?

Section B

All questions can be answered.

Each question carries 6 marks.

(Ceiling 24 marks)

11. (i) State the important functions of Statistics.
 (ii) Distinguish between population and sample. Point out any *two* advantages of sampling.
 12. (i) What is secondary data ? Give any *two* sources of secondary data. Comment briefly on the choice between primary and secondary data for the investigation.
 (ii) Define ordinal data with an example.
 13. (i) Compute mean, median and mode from the following observations :
 24, 16, 33, 18, 32, 16, 17, 16, 26 .
 (ii) Calculate standard deviation of 6, 2, 3, 1.
 14. Represent the following data by a multiple bar diagram :

| Year | Sales (in lakhs of Rs.) | Gross profit (in lakhs) | Net profit (in lakhs) |
|------|-------------------------|-------------------------|-----------------------|
| 2010 | 120 | 40 | 20 |
| 2011 | 135 | 45 | 30 |
| 2012 | 140 | 55 | 35 |

15. (i) Find geometric mean of 2, 6, 3, 8.
 (ii) A man travels from City A to City B by a car and takes 4 hours to cover the whole distance. In the first hour he travels at a speed of 50 km/hr., in the second hour his speed is 64 km/hr., in third hour his speed is 80 km/hr. and in the fourth hour he travels at the speed of 55 km/hr., find the average speed of the motorist.

Section C

*Answer any **one** question.*

The question carries 10 marks.

16. (i) Define skewness. What is the difference between positively skewed and negatively skewed distributions ?

(ii) Compute mean deviation about median from the following data :

22, 12, 14, 7, 18, 16, 11, 15, 13.

(iii) Define deciles. Compute the deciles D_3 from the data : 10, 50, 30, 20, 10, 20, 70, 30.

(4 + 3 + 3 = 10 marks)

17. (i) Give different types of classification of data.

(ii) Define tabulation of data. What are reference and summary tables ?

(iii) What are the important methods of collecting primary data ?

(iv) State any *two* limitations of Statistics.

(2 + 4 + 2 + 2 = 10 marks)

[1 × 10 = 10 marks]