K24U 0552

Reg. No. : .....

Name : .....

First Semester B.Sc. Artificial Intelligence and Machine Learning Degree (CBCSS – OBE – Regular – 2023 Admission)
Examination, November 2023
Complementary Elective Course
1C01STA – AIML : DESCRIPTIVE STATISTICS

Time : 3 Hours Max. Marks : 40

PART – A
(Short Answer)

Answer **all** the **6** questions, **each** carries 1 mark.

1. What is the primary goal of descriptive statistics ?
2. What is meant by a frequency distribution ?
3. Which measure of central tendency is most affected by extreme values ?
4. What does the standard deviation measure in a dataset ?
5. If a dataset has a positively skewed distribution, which measure of central tendency is likely to be the largest ?
6. What is sampling frame ? (6×1=6)

PART – B
(Short Essay)

Answer **any 6** questions, **each** carries **2** marks.

7. Distinguish between population and sample.
8. Write notes on Ogive curves.

P.T.O.

9. Calculate the harmonic mean of the following data.

   3, 6, 9, 12, 15

10. Mean of a series is given to be 30. A constant 5 is added to all elements of the series. What is the mean of the new series ?

11. Shares of two companies have their average share value are 15 and 20 and SD are 5 and 8 respectively. Which company's shares have greater variability ?

12. Write the relation between first four central moments and raw moments.

13. What is the difference between SRS and SRSWOR ?

14. What are the advantages of sampling compared to population ? **(6×2=12)**

PART – C
(Essay)

Answer **any** 4 questions, **each** carries 3 marks.

15. Define statistical data. Write a note on the different types of statistical data.

16. Define questionnaire. State its merits and demerits.

17. The mean age of men and women is 30 years. If the mean age of men is 32 and women are 27, find the percentage of men in the group.

18. Draw histogram from the following data.

Marks	100-150	150-200	200-300	300-500	500-800
No. of Students	60	100	100	80	180

19. For a distribution the mean is 10, variance is 16, $\beta_1 = 1$. Obtain the first three moments about origin.

20. Explain different methods of selecting simple random sample. **(4×3=12)**

PART – D
(Long Essay)

Answer **any 2** questions, **each** carries **5** marks.

21. Convert the following table into a less than cumulative frequency table and a more than cumulative frequency table.

Mid X	2	6	10	14	18	22
Frequency	5	18	23	16	10	3

22. Find mean, median and mode for the following data.

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	12	18	24	17	15	9

23. The first four central moments of a distribution are 0, 2.5, 0.7 and 18.75 respectively. Test the skewness and kurtosis of the distribution.

24. What is meant by probability sampling method ? Explain different probability sampling techniques. **(2×5=10)**