

Subject:- Statistics

Time :- 03 Hours

M.Marks:-70

Long Answer Type Question

(Note: - Each question carries 05 Marks: 04 x 05 = 20 Marks)

- Q1. What are the Characteristics of an Idle Measure of central tendency? Prove that sum of deviations taken from mean is zero.

OR

From the following data relating to wages & workers in a factory, find the modal wage.

Wages (Rs):	120	140	200	250	270	300	
No of Workers:	05	20	25	23	26	15	05 x 01 = 05

- Q2. Give the concept of partition values, other than Median. How to determine Quartiles, Deciles & Percentiles in a case of a discrete series?

OR

Calculate the lower & upper Quartiles, third deciles and 20<sup>th</sup> Percentile from the following data.

Central Value: -	2.5	7.5	12.5	17.5	22.5	
Frequency:-	07	18	25	30	20	05 x 01 = 05

- Q3. Show that variance & consequently S.D. is independent of change of origin, but not of scale.

OR

The mean of two samples of sizes 50 & 100 respectively are 54.1 and 50.3 & their respective S.D's are 08 & 07 obtain the S.D of the sample obtained by combining the two samples.

05 x 01 = 05

- Q4. What do you understand by the term "correlation" What are different Methods used for calculation of co- efficient of Correlation ?

OR

Find the correlation co- efficient between size and defects in quality from the following data:

Group Size	No of items	No. Of Defective items
13-16	200	150
16-17	270	162
17-18	340	170
18-19	360	180
19-20	400	180
20-21	300	114

## Short Answer Type Questions

(Note: - Each question carries 03 Marks 08 x 03 = 24)

05 x 01 = 05

- Q 05. Define Statistics. What are four main functions of Statistics?
- Q 06. Differentiate between Primary and Secondary types of Data.
- Q 07. What do you understand by Bar diagram and a Sub-divided Bar diagram?
- Q 08. Calculate Median from the following data.

X:	0-2	2-5	5-10	10-20	20-35	35-50
f:	3	17	23	40	13	4

- Q 09. What are the uses of Moments? Give the relation of first four central moments with the raw moments.
- Q 10. For a moderately Skewed distribution, what relation between Mean, Median and Mode exists? How to ascertain Kurtosis with the help of  $\beta_2$ ?
- Q 11. Construct the Scatter diagram of the following data relating to heights and weights of Students.

(Height in cms):	160	180	172	165	170	168	175	162	179	168
(Weight in kgs):	52	65	63	58	68	60	75	62	70	68

- Q 12. Construct a flow Chart for calculation of Arithmetic Mean.

### VERY SHORT TYPE QUESTIONS (Note: - Each question carries 02 Marks 08 x 02 = 16)

- Q13. Enunciate the law of statistical Regularity.
- Q14. What are the requisites of reliable data?
- Q15. Give (03) advantages of diagrammatic representation of data.
- Q16. Define Quartiles & give their importance.
- Q17. What are the different uses of Dispersion?
- Q18. Write the relations of the first four moments about the arbitrary mean "a" and raw moments.
- Q19. What is the purpose of measuring Skewness & kurtosis?
- Q20. Write a short note on Functional Components of a Computer.

## Objective Type Question

(Note: - Each question carries 01Marks:  $10 \times 01=10$ )

- Q21. The Word "Statistics" is used as  
(a) Singular  
(b) Plural  
(c) Singular and Plural Both  
(d) None of the above
- Q22. Which of the following represents data?  
(a) A single value  
(b) Only two values in a set  
(c) A group of values in a set  
(d) None of the above.
- Q23. Graphs and charts facilitate  
(a) Comparison of values  
(b) To know the trend  
(c) To know relationship  
(d) All the above
- Q24. In case of positively skewed distribution, the extreme values lie in  
(a) Left tail  
(b) Right tail  
(c) Middle  
(d) Any where
- Q25. Key Board is an  
(a) Input Device  
(b) Output Device  
(c) Both a and b  
(d) None of the above.
- Q26. Pictograms are \_\_\_\_\_ Dimensional diagrams.
- Q27. Median is same as \_\_\_\_\_ Decile.
- Q28. Best measure of Dispersion is \_\_\_\_\_.
- Q29. Moments of odd order about mean for a symmetric distribution are \_\_\_\_\_
- Q30. If the skewness is negative, the Mean is \_\_\_\_\_ than Mode.