I PUC MID-TERM EXAMINATION OCTOBER-2023 (SET-1)

SUBJECT : STATISTICS (31)

Time : 3 Hrs. 15 Mins. **Max Marks : 80**

Instructions :

1) **Statistical tables and Graph sheets will be supplied on request.**
2) **Scientific calculators are allowed.**
3) **All working steps should be clearly shown.**
4) **Only the first written answers will be considered for Section-A.**

SECTION-A

I Choose the correct answer from the choices given: **5x1=5**

1) Who defined STATISTICS as 'The Science of averages'
   a) R. A. Fisher b) A. L. Bowley c) Horace Secrist d) Boddington

2) An enumeration based on sample is called :
   a) Census enumeration b) Published source c) Unpublished source d) Sample Survey

3) In a table, column headings are called
   a) Stubs b) Captions c) Head note d) Foot note

4) Percentage bar diagram is a type of
   a) one-dimensional diagram b) two-dimensional diagram
   c) three-dimensional diagram d) Cartograms

5) In a moderately skewed distribution, the relation among the value of mean, median and mode is ___
   a) Mode = 2 Median – 3 Mean b) Mode = Median – 3 Mean
   c) Mode = 2 Median – Mean d) Mode = 3 Median – 2 Mean

II Fill in the blanks by choosing the appropriate answer from those given in the brackets : **5x1=5**

(Ogives, four, variable, ten, class limits, respondents)

6) A quantitative characteristic which varies from unit to unit is_____.
7) The_____ are the persons from whom the information will be collected.
8) The lowest and the highest values which are taken to define the boundaries of a class are _____.
9) _____ are also called as cumulative frequency curves.
10) Measures which divide the data into _____ equal parts are known as quartiles.

III Match the following : **5x1=5**

11)	Nominal Scale	a) Body of the table
12)	Mailed questionnaire	b) Roll numbers assigned
13)	Numerical data	c) $Q_3 - Q_1$
14)	Area of the Histogram	d) Partition values
15)	Inter quartile range	e) Total frequency
		f) Primary data

IV Answer the following questions: **5x1=5**

16) Define Population.
17) What is Strata ?
18) Define Width of the class.
19) Mention a two-dimensional diagram.
20) If S.D = 6, find the variance.

(P.T.O.)

SECTION-B

V Answer any FIVE of the following questions : **5x2=10**

21) Mention two branches of Statistics

22) Mention two stages of statistical enquiry.

23) Mention two objectives of classification.

24) If Range = 34 and width of the classes = 5, then determine the approximate number of classes (K).

25) Name two graphs which are located with the help of Histogram ?

26) Write any two comparisons between diagrams and graphs.

27) If $n_1 = 10$, $n_2 = 20$, $\overline{X}_1 = 34$, $\overline{X}_2 = 37$, find the combined mean.

28) For a moderately skewed distribution, Mean = 160, Mode = 157 and S.D. = 50, find coefficient of Skewness.

SECTION-C

VI Answer any FOUR of the following questions : **4x5=20**

29) State the characteristics of Statistics.

30) What are the remedies to remove the distrust of statistics.

31) Mention all the methods of collection of Primary data.

32) State the differences between census enumeration and sample survey.

33) Following is the number of printing mistakes per page, prepare a frequency distribution. 4

0 1 3 3 2 5 6 0 1 0 4 1 1 0 2
3 2 5 0 4 2 2 3 3 4 6 1 4 3 2

34) Represent the following data by multiple bar diagram.

Years / Profits	2000	2005	2010	2015	2020
Firm A	135	165	150	190	220
Firm B	140	100	180	190	200

35) Calculate Harmonic Mean for the data regarding wages obtained by workers

Wages (Rs)	100-200	200-300	300-400	400-500	500-600
No. of Workers	10	35	40	30	5

36) Calculate Mean deviation from mean for the following data :

X : 25, 20, 16, 22, 24, 17, 23.

VII Answer any TWO of the following questions : **2x5=10**

37) A Sample study about the food habits of residents of a village, the following data were observed: 55% of the residents were males; 85% were vegetarian; only 12% were non-vegetarian females. Tabulate the above information.

38) Represent the following data by means of Pie diagram

Items	A	B	C	D	E	F
Number of Purchase	12	70	60	68	50	40

39) Draw less than ogive and locate median value from the data given below

C.I.	0-10	10-20	20-30	30-40	40-50
f	12	15	20	8	5

(P.T.O.)

40) From the following data, find the missing frequency, if median is given as 26.

Marks Scored	0-10	10-20	20-30	30-40	40-50
Number of Students	4	7	15	7	6

SECTION-D

VIII Answer any TWO of the following questions : **2x10=20**

41) The following figures show the height and weight of 15 students. Represent then in a bivariate frequency table by taking exclusive type of class intervals. (Take the class width for height as 2 and that for weight is 10).

Weight (in lbs)	135	136	137	163	139	122	132	140
Height (in inches)	65	65	64	70	67	63	69	67

Weight (in lbs)	152	120	148	170	143	129	127
Height (in inches)	67	66	68	70	71	62	65

42) Calculate coefficient of variation from the following data regarding points scored by two teams. Find which team is more consistent.

Team A	2	8	4	5	1
Team B	3	6	9	4	3

43) Calculate Karl-Pearson's coefficient of Skewness and comment.

Age (in Years)	20-29	30-39	40-49	50-59
No. of employees	12	20	20	8

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