

Note : 1) Attempt all questions.

2) Graph papers, log tables will be supplied on request.

3) Use of Calculator is allowed.

4) In each questions, attempt any three out of five questions.

Q.1. a) There were 100 students in a class who were given a test in English out of 60 boys in all 40 passed in the test. In all 20 students of the class used to wear glasses and them 18 succeeded in the test including 10 boys. A total of 7 students from the class succeeded in the test while 12 boys used to wear glasses. Tabulate the data.

b) The following data give the weight of 4 workers of a certain factor (in Kg).

52.3	61.3	71.4	56.4	57.1
69.0	62.8	73.5	47.8	45.6
62.5	64.3	58.7	56.6	60.9
50.5	49.2	55.4	61.8	67.6
59.5	52.9	64.8	69.9	64.7
63.4	48.1	57.4	56.6	51.2
61.2	57.2	61.7	50.7	56.8
62.8	48.9	51.8	52.0	45.1

Prepare a frequency table by grouping the data into suitable classes. Also find the percentage and relative frequencies.

c) Draw the histogram for the following frequency distribution. Hence find the mode.

Marks :	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
No. of Students :	5	12	25	18	10	6

d) Draw a less than ogive for the following data and Find Median and Quartiles graphically.

Marks :	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50
No. of Students :	10	17	26	30	33

Marks :	50 - 60	60 - 70	70 - 80
No. of Students :	25	12	9

e) The following data refer to the weight distribution of 100 employees of a company.

Weight (in kg) :	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70
No. of employees :	6	8	15	26	20

Weight (in kg) :	70 - 75	75 - 80
No. of employees :	14	11

- Find the maximum weight of lightest 20% of the employees.
- How many employees have their weight between 58kg. and 68 kg ?

Q. 2. a) The following data show height (x) (in cm) and weight (y) (in kg.) of a group of 30 students, expressed as (x, y)

(137, 34)	(146, 38)	(142, 40)	(131, 31)	(136, 38)	(144, 38)
(130, 33)	(140, 36)	(142, 38)	(139, 36)	(145, 41)	(149, 37)
(146, 41)	(137, 40)	(138, 38)	(135, 37)	(132, 28)	(150, 37)
(136, 33)	(141, 45)	(149, 38)	(143, 39)	(138, 30)	(140, 41)
(138, 35)	(143, 40)	(138, 34)	(150, 40)	(132, 34)	(148, 39)

Taking the class-intervals 131 - 135, 136 - 140, 141 - 145 and 146-150 for x and 28 - 32, 33 - 37 and 38 - 42 for y, construct :

- A bivariate frequency table,
- Marginal frequency table of x and y.

b) Draw the multiple bar diagram and subdivided bar diagram for the following data :

Item	Family A	Family B	Family C
Food	35	30	37
Clothing	15	18	17
Rent	20	20	15
Fuel	10	12	13
Miscellaneous	20	20	18

c) The following is the distribution of height of the students in a class :

Height (in cm) :	100 - 110	110 - 120	120 - 130	130 - 140	140 - 150
No. of students :	5	8	...	10	7

If the Median of the distribution of heights is 127cm, Find the number of students belonging to the height group 120cm - 130 cm.

d) The weighted average of marks in three subjects of a student is 40. His marks in the first two subjects are 50 and 25. The weights of the three subjects are 3, 2 and 1 respectively. Find his marks in the third subject.

e) Calculate D1, D8, P46, P70 from the following series.

Daily wages in Rs. :	30	50	70	90	110	130	150
No. of workers :	2	10	12	15	20	13	12

  

Daily wages in Rs. :	170	190
No. of workers :	10	4



52.2	51.3	51.4	56.4	57.1
52.0	51.3	53.5	47.8	45.8
52.3	51.3	58.7	56.6	60.9
52.1	52.2	55.4	61.8	67.6
52.5	53.9	64.8	69.9	64.7
53.4	48.1	57.4	55.5	51.2
51.2	52.2	61.7	50.7	56.8
52.5	45.9	51.8	52.8	45.1

c) Draw the histogram for the following frequency distribution. Hence find the mode.

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No. of students	5	12	25	18	10	6

d) Draw less than ogive for the following data and find Median and Quartiles graphically.

Marks	0-10	10-20	20-30	30-40	40-50
No. of Students	10	17	26	30	33

Marks	50-60	60-70	70-80
No. of Students	25	12	9