

- N.B. :**
1. Both the questions are compulsory.
 2. Figures to the right indicate marks.
 3. Graph papers will be provided on request.

Q.1 Solve any THREE questions from the following :

- a. The monthly profits (in Rs) of 100 shops are distributed as follows :

Profit per shop	Number of shop
upto 100	12
upto 200	30
upto 300	57
upto 400	77
upto 500	94
upto 600	100

Prepare the frequency distribution and draw the histogram. Hence locate the value of mode. (5)

- b. The following data represents frequencies of crimes in Bombay during the year 1992 and 1993.

	Year	
	1992	1993
House-Breaking	1809	1831
Pick -pocketing	684	654
Robberies	203	250
Murders	131	153
Dacoities	30	22

Represent these data by a suitable diagram. What conclusion can you draw from the diagram.

- c. A survey of 1000 persons from Mumbai was conducted of which 600 were Maharashtrians and remaining non-Maharashtrians. The ratio of total number of men and women was 1 : 1. 50% of men were Maharashtrian and remaining non-Maharashtrian. 100 Non-Maharashtrian men and 50 Maharashtrian men watched 'English' news on television. And among women, 100 Maharashtrian women and 50 non-Maharashtrian women watched "Hindi" news on television. Tabulate the above information.

- d. For the following frequency distribution find mean, median and mode.

Marks	No. of Students
0 - 10	10
10 - 20	17
20 - 30	26
30 - 40	30
40 - 50	33
50 - 60	25
60 - 70	12
70 - 80	9

- ii. Compute Harmonic mean for the following set of data. (3)
 $x : 25.3 \quad 28.7 \quad 30.0 \quad 32.9$

Q.2 Solve any THREE questions from the following :

- a. Find the coefficient of range, coefficient of Quartile deviation for the following data. (5)
 $55, 56, 45, 61, 58, 57, 55, 47, 51, 55, 51, 46$

- b. Calculate Karl Pearson's Coefficient of Skewness for the following distribution of weekly wages of 150 workers in a factory. (5)

Weekly Wages (in Rs.)	No. of Workers
30 - 40	10
40 - 50	15
50 - 60	34
60 - 70	41
70 - 80	28
80 - 90	13
90 - 100	9

- c. Calculate Pearson's coefficient of correlation and also obtain the regression equation of y on x. (5)
 Hence obtain an estimate of y when x is 12.

$x : 6 \quad 2 \quad 10 \quad 4 \quad 8$

$y : 9 \quad 11 \quad 5 \quad 8 \quad 7$

- d. Find the coefficient of rank correlation for the following data (5)

Marks in Politics : 60 40 34 39 39 43 49 50

Marks in Economics : 40 28 29 32 65 60 58 55

- e. Construct an index number for the year 1998 with the year 1994 as base by family budget method.

Commodity	Weight	Price per unit in rupee	
		1994	1998
A	35	16.00	20.00
B	25	40.00	60.00
C	10	2.50	4.00
D	20	6.00	7.50
E	10	2.00	3.50
