

# F.Y.F.M Basic Statistics

Sem-I

Note:- 1) All questions are compulsory & carry equal marks  
 ii) Figure to right indicate marks of subquestions  
 iii) Use of Simple calculator is allowed

Q1 a) Find 6<sup>th</sup> decile ( $D_6$ ) and 73<sup>rd</sup> percentile ( $P_{73}$ ) (18)

Income (in 000 Rs)	10-12	12-14	14-16	16-18	18-20	20-22
No. of workers	15	35	50	60	30	10

b) Find the coefficient of correlation. (7)

X	12	14	23	18	10	19
Y	68	78	85	75	70	94

OR

Q2 a) Calculate mean deviation from mode (18)

Production in units	150-154	154-158	158-162	162-166	166-170	170-174
No. of workers	10	20	15	30	15	10

b) Find two regression equations also estimate Y when X=35 and X when Y=80 (7)

	mean	SD
X	40	4
Y	75	10

Q3 a) Fit a straight line trend using least square method. Plot the given data on graph paper also find sales for year 2007 (15)

year	1999	2000	2001	2002	2003	2004	2005
No. of shirts	500	550	600	575	625	600	650

OR

Q2 a) Calculate 4-yearly moving average & plot on the graph

year	2001	2002	2003	2004	2005	2006	2007	2008
Production	50	36.5	43	44.5	38.9	38.1	32.6	41.7
	2009	2010	2011					
	41.7	41.1	33.8					

(10)



(28)

b) From the following data calculate Chain base index number

Commodity	weights	Price in Rs			
		1999	2000	2001	2002
A	5	8	10	11	13
B	3	5	7	9	11
C	2	5	8	9	12
D	2	4	6	8	9

Q 3) a) A retailer buys a certain item for Rs 20 and sell it for Rs 50 a case. The item is worthless after the first day. The probability distribution for the demand is as follows.

Daily demand	30	35	40	45	50
Probability	0.1	0.15	0.2	0.3	0.25

OR

Q 3) a) A housewife buys a dozen of eggs of which 2 are bad. She chooses 4 eggs to scramble for breakfast. Find the probability that she chooses (i) all good eggs (ii) 3 good & one bad (iii) 2 good & 2 bad

b) Find mean and Variance of  $X$  for the following probability distribution

$X$	2	4	6	8	10
$P(X)$	0.2	0.15	0.5	0.1	0.05

4) a) Write a note on Statistical methods

b) Draw a less than curve and more than Curve for the data related to factory Bursting process for NO. of bags



Bursting pressure (in kgs)	No. of bags
5-10	2
10-15	9
15-20	29
20-25	54
25-30	11
30-35	5

SR

Q4) a) Write about problems in the construction of index number. (7)

b) Represent following data by histogram & frequency polygon (8)

Marks	10-20	20-30	30-50	50-70	70-80
No. of students	5	15	24	20	7