

Basic Statistics

F.Y. F.M. - Sem I ATKT Aug 2012 21-08-12

Note: 1) All questions are Compulsory & carry equal marks

11) Use of Simple calculator is allowed

111) Figures to the right indicate full marks

Q 1) a) The income tax paid by 500 employees⁽⁸⁾ of a company is given below find 6th decile & 73rd percentile.

Income tax in Rs	3000-4000	4000-5000	5000-6000	
No. of employees	50	70	80	
	6000-7000	7000-8000	8000-9000	9000-10000
	120	100	50	30

b) Represent following data by disto Histogram & frequency poly gen⁽⁷⁾

Class	0-200	200-400	400-600	600-800
Frequency	18	27	32	40
	800-1000	1000-1200		
	36	15		

OR⁽⁸⁾
Q 1) a) Calculate median & mode for following data.

Income in Rs	500-1000	1000-1500	1500-2000	2000-2500	2500-3000
No. of person	30	50	100	40	30

b) Draw Cumulative frequency Curve for the following distribution.⁽⁷⁾

Class	2-3	3-4	4-5	5-6	6-7
frequency	10	15	30	25	15

(4)

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Q 2) a) Find arithmetic mean & standard deviation for the data given below (7)

Reduction in weight	0-2	2-4	4-6	6-8	8-10
No. of patients	5	5	20	15	5

b) Find Coefficient of Correlation (8)

X	101	108	105	145	153
Y	117	97	102	118	110

OR

Q 2) a) Calculate mean deviation from mean (8)

Collection (in 000)	10-12	12-14	14-16	16-18	18-20	20-22	22-24
Cinema house	11	17	20	22	10	10	10

b) Find Coefficient of rank correlation coefficient (7)

X	2	1.5	2.5	1.75	2.75
Y	7	9.25	8	8.75	8.5

Q 3) a) Find two regression lines & also find x when $Y = 75$ & y when $X = 3$ (8)

	Average	S.D.
X	4	0.5
Y	80	7

$$r = 0.55$$

b) Calculate I_L , I_p & I_q Index numbers from the following data (7)

Commodity	1996		1997	
	Price	Quantity	Price	Quantity
A	2	74	3	82
B	5	105	4	110

OR

Q3) a) Two regression equations are $3x + 2y - 26 = 0$ & $6x + y - 31 = 0$ find $\bar{x}$, $\bar{y}$ & r coefficient of correlation between x & y (8)

b) Calculate five yearly moving average & (17)
represent it on graph paper.

year	1995	1996	1997	1998	1999	2000
No. of student	322	317	357	392	402	405
	2001	2002	2003	2004	2005	
	410	427	405	438		

Q4) a) Find Expectation & Variance for the following probability distribution (8)

x	2	4	6	8	10
probability	0.3	0.2	0.2	0.2	0.1

b) What are the functions of statistics? (7)

OR

Q4) a) A Card is drawn at random from full pack of cards. find the probability that i) it is a face card ii) It is spade card (8)

b) Write note on properties of Normal Curve & Normal distribution.