

STATISTICAL METHODS FOR MANAGEMENT

(For students admitted in 2010, 2011, 2012 and 2013 only)

Time: 3 hours

Max. Marks: 60

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Discuss the significance of statistics and mathematics in the managerial sciences.
(b) Explain the various methods of collecting primary data.
- 2 (a) Discuss the importance of graphs and diagrams in the analysis of data.
(b) Draw a suitable diagram for the following data.

Course	Number of students		
	Boys	Girls	Total
B.A	25	22	47
B.com	38	20	58
B.Sc	95	18	113
M.B.A	45	16	61
B.Tech	32	18	50
B.Pharm	25	15	40

- 3 (a) Explain the measures of central tendencies.
(b) Find the quartile deviation for the following data.

Class	100 – 200	200 – 300	300 – 400	400 – 500	500 – 600
Frequency	110	124	210	120	118

- 4 (a) Define the types of correlation and explain the scatter diagram method.
(b) Find the coefficient of correlation for the following data.

Price in Rs:	100	110	130	142	155	160	180	200	210	230
Demand	200	180	160	145	130	125	114	100	80	60

- 5 (a) Define linear regression and non-linear regression. State the properties of regression coefficients.
(b) Find the regression lines for the following data.

Income (In '000 Rs):	10	20	25	30	38	40	42	50	56	60
Expenditure (In '000 Rs)	09	18	20	25	32	38	40	48	50	53

- 6 (a) Define the classical, statistical and axiomatic definitions of probability. State and prove addition theorem of probability.
(b) Fit a Poisson distribution to the following frequency data.

X	0	1	2	3	4	5	6	7	8	9	10	11	12
F	125	186	215	200	172	140	110	80	60	40	10	8	2

- 7 (a) State the properties of normal distribution.
(b) Find the first two derivatives of the following functions.
(i) $y = 2x^2 + 5x + 2$. (ii) $y = 5x^3 + 3x^2 + 5x + 2$.
- 8 (a) Define: (i) Marginal profit. (ii) Elasticity of demand with respect to price.
(b) Find mean and variance of Poisson distribution.
