



- (b) The following data represents the-revenue-generated by a business process outsourcing center in lakhs of rupees. Fit a linear trend line to the following data using 'least squares principle' and estimate the expected sales volume for the year 2005. (16)

Year :	1996	1997	1998	1999	2000	2001	2002	2003
Revenue :	22.5	27.8	26.8	25.8	29.2	25.6	37.5	46.0

12. (a) A cell phone company uses three different methods to contact its Discontinued customers for a re-connection, namely, (i) Telephone contact, (ii) Sending an E-mail and (iii) Approach by the sales Executive. It is known from experience that 30%, 25% and 45% are the customers dealt with these three methods. Out of the discontinued customers, 65%, 50% and 80% of the Discontinued customers respectively have got re-connection of their cell phones subsequent to the contact. If a randomly selected customer is found to have got his cell phones re-connection recently, what was the probability that he was approached by the sales Executive?

Or

- (b) In a super market, on an average 6.5% of the days account for a daily revenue of Rs. 28,000 or more. 30% of the days the daily revenue is Rs.12,000 or below. Estimate the average daily revenue and Standard Deviation. Assume the daily revenue follows a Normal distribution.

13. (a) (i) Discuss various sampling and non sampling errors.  
(ii) Discuss in detail Stratified and multi stage sampling methods.

Or

- (b) For the following population {3,6,2,5,4}, Prove that the sample mean is an unbiased estimator for the population mean by using a sample size,  $n=3$ .

14. (a) The following data provides the sample information on income and the company for a cell phone connection. Apply the appropriate test of significance and conclude.

Income	Company			
	BSNL	TATA	RELIANCE	AIRTEL
Low	25	35	20	30
Medium	80	120	60	200
High	250	450	320	300

Or

Unit 3  
Hypothesis  
Give in two  
means

- (b) A software training center uses two methods to train its trainees. A random sample of 12 trainees each trained by methods A and B are selected at random and an examination is conducted for them. The marks scored by them are given as below. Test: (i) for the equality of means and (ii) for the equality of variances

Method A	65	45	50	66	55	61	64	55	39	75	84
Method B	70	60	44	55	61	80	65	74	56	61	72

15. (a) The following grades are obtained by students of a management programme in "SFM" paper when taught in the A = Morning Class and B = Afternoon class by the same Professor. Can you conclude that morning class performed worse than the afternoon class by applying Mann-Whitney U test?

A:	73	87	75	82	66	95	75	70	79	56	50
B:	86	81	84	88	90	85	84	92	83	91	53

Or

Unit-4

- (b) The following are the kilometers per gallon which a test driver got for ten tankful each of three kinds of gasoline A, B and C.

A	30	41	34	43	33	34	38	26	29	36
B	39	28	39	29	30	31	44	43	40	33
C	29	41	26	36	41	43	38	38	35	40

Unit-4

Use the Kruskal-Wallis and test for significant difference in the average kilometer yield of the three types of Gasoline. At 5% level of significance.

