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SARDAR PATEL UNIVERSITY

BBA SEMESTER IV EXAMINATION 2016

SUBJECT: STATISTICS FOR MANAGEMENT II

SUBJECT CODE: UM04CBBA06

DATE: 21/04/2016, Thursday TIME: 10.30 AM TO 12.30 PM

Note (i) Figures to the right indicate marks

(ii)Statistical table will be provided on request

(iii) Use of simple calculators is allowed

Q 1(a)	What is sampling? Give characteristics of an ideal sample	7
(b)	Explain meaning, advantages, limitations and suitability of (i) Simple Random Sampling and (ii) Cluster Sampling	8
	OR	
Q 1(a)	Explain with illustration the meaning of (i) Sample (ii) Population (iii) Statistics and(iv) Parameters	7
(b)	Write note on (i) Sampling Error and (ii) Population Survey	8
Q 2(a)	Explain the procedure of testing a hypothesis	7
(b)	A sample of size 400 was drawn and the sample mean was found to be 99. Test whether this sample could have come from a normal population with mean 100 and variance 65 at 5% level of significance.	8
	OR	
Q 2(a)	The means of two large samples of sizes 1000 and 2000 are 67.5 and 68. Test at 5 % level of significance the equality of means of the two populations each with standard deviation 2.5	7
(b)	The following information is about the heights of students of two colleges A and B. Is the difference between standard deviations significant at 5% level? College A: Mean height 148 cm, S.D. 6.0 cm, Sample size 1000 College B: Mean height 150 cm, S.D. 5.5 cm, Sample size 1200	8
Q 3(a)	Write note on (i)Degree of freedom and (ii) Small sample tests	7
(b)	Prices of shares of a company on the different days in a month were found to be: 36, 35, 39, 40,39, 41, 40, 33, 34, 38 Discuss whether the mean price of shares in the month is 35 (Use 5% level of significance)	8
	OR	

(P.T.O.)

Q 3(a) A training of 3 months is given to 10 officers and the improvement in their performance were recorded in terms of score as: -4, 6, -4, -20, 0, 4, -10, -16, -2, and 6. Can it be concluded that the employees have benefited by training? (Use 5% level of significance) 7

(b) Two types of batteries are tested for length of life and the following results are obtained: 8

Battery	Sample size	Mean life (hours)	Variance
A	10	500	100
B	12	560	121

Test the hypothesis that battery B has more average life than that of A (Use 5% level of significance)

Q 4(a) Write note on : Applications, uses and limitations of Chi Squares test 7

(b) Two random samples drawn from two normal population are: 8

Sample I	15	11	21	22	18	17	13	19	20	14	-	-
Sample II	20	26	39	35	28	27	31	21	34	36	23	30

Test at 5 % that two populations have the same variance

OR

Q 4(a) In a certain sample of 2000 families, 1400 families are consumers of tea. Out of 1800 Hindu families 1236 families consume tea. Use Chi Squares test at 5 % level of significance TO study whether any significant difference exist between consumption of tea among Hindu and non-Hindu families? 7

(b) The following data represent the number of units of production per day turned out by 5 different workers using 4 different types of machines: 8

Worker	Machine Type			
	A	B	C	D
1	40	34	43	42
2	42	36	48	39
3	30	32	40	28
4	39	34	42	49
5	34	38	45	35

Use coding by subtracting 36 from each value and 5 % level of significance

(a) Test whether the mean productivity is the same for the four different types of machines and

(b) Test whether five workers differ with respect to mean productivity

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