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[1/A-2]

**SARDAR PATEL UNIVERSITY**  
**BBA SEMESTER IV EXAMINATION APRIL 2018**  
**SUBJECT: STATISTICS FOR MANAGEMENT II**  
**SUBJECT CODE: UMO4CBBA06**

**DATE: 20/04/2018**

**TIME: 10.00 AM TO 12.00 NOON**

**Note: (i) Figures to the right indicate marks**

*Total Marks : 60*

(ii) Use of simple calculators is allowed

(iii) Statistical tables will be provided on request

Q. 1(a) What is sampling? Explain the characteristics of an ideal sample. 8

(b) Explain in detail (i) Simple Random Sampling and (ii) Stratified Random Sampling

**OR**

Q. 1(a) Explain sampling techniques that you have studied. 8

(b) Explain (i) Random sample (ii) Population and (iii) Sampling errors 7

Q. 2(a) State the procedure of testing a hypothesis 8

(b) Given the following information relating to two places A and B, test at 5% level of significance, whether there is any significant difference between their mean wages?

	Place A	Place B
Mean wages(Rs)	47	49
Standard Deviation of wages(Rs)	28	40
Number of Employees	1000	1500

**OR**

*C.P.T.O.)*

- Q. 2(a) The mean yield of two sets of plots and their variability are given below. Examine, whether the difference in the variability in yield is significant at 5% level of significance. 8

	Set of 40 plots	Set of 60 plots
Mean yield per plot	1258	1243
Standard Deviation per plot	34	28

- (b) In order to make a survey of the buying habits, two markets A and B are chosen at two different parts of the city. 7  
 400 women shoppers are chosen at random in market A, their average daily expenditure on food is found to be Rs. 250 with a s. d. of Rs 40.  
 The figures are Rs. 220 and Rs. 55 respectively in the market B, where also 400 women shoppers are chosen at random.  
 Test at 1 % level of significance, whether the average daily food expenditure of the two populations of shoppers are equal?

- Q. 3(a) Give test statistic for 't' test. When will you employ 't' test? Also give its two applications. 8

- (b) The mean weekly sales of the chocolate bar in candy stores were 146.3 bars per store. After advertising campaign the mean weekly sales in 22 stores increased to 153.7 with a s. d. of 17.2. 7

Was the advertisement campaign successful?

(Use 5% level of significance)

OR

- Q. 3(a) The nicotine content in milligrams of two samples of tobacco were found to be as follows: 8

Sample A	24	27	26	21	25	--
Sample B	27	30	28	31	22	36

Can it be said that two samples come from normal population having the same mean?(Use 5 % level of significance)

- (b) The sales data of an item in six shops before and after a special promotional campaign are as under: 7

Shops	A	B	C	D	E	F
Before Campaign	53	28	31	48	50	42
After Campaign	58	29	30	55	56	45

Can the campaign be judge to be a success?  
(Use 5 % level of significance)

- Q. 4(a) In a survey of 200 boys of which 75 were intelligent, 40 had educated fathers, while 85 of the unintelligent boys had uneducated fathers. Do these figures support the hypothesis that educated fathers have intelligent boys? (Use 5 % level of significance) 8

- (b) Write note on : 7

- (i) Correction factor
- (ii) Degree of freedom
- (iii) Level of significance

- Q. 4 For the following data which represent the number of units of production per day turned out by 5 workers using 4 machines. Set-up ANOVA table(Assume origin at 20) 15

Worker	Machine Type			
	A	B	C	D
I	4	-2	7	-4
II	6	0	12	3
III	-6	-4	4	-8
IV	3	-2	6	-7
V	-2	2	9	-1

—X—

