Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF MANAGEMENT

BBA Summer 2018 - 19 Examination

Semester: 4 **Date: 20/04/2019**
Subject Code: 06191256 **Time: 10:30AM to 1:00PM**
Subject Name: Business Statistics-II **Total Marks: 60**

Instructions
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Do as Directed.

A). Multiple choice type questions (Each of 1 mark) **(05)**

1 For a Normal Distribution, if Standard Deviation is 5 then the value of Mean Deviation _____

a) 4 c) 3
b) 2 d) 5

2 Degrees of Freedom for a Sample Space of 4 observation with one restriction is given by

a) 5 c) 4
b) 3 d) 0

3 If all the Observed frequencies and Expected frequencies are Equal then the value of χ^2 will be __

a) 1 c) 0
b) 2 d) none of these

4 The Ratio- To-Moving average method is known as _____

a) Shifting the trend c) Percentages of moving average method
b) Trend to moving method d) none of these

5 The Total sum of squares will be the sum of squares due to Rows ,the sum of squares due to Columns and the sum of squares due to _____

a) Normality c) Trend
b) Error d) None of these

B). Define the following. (Each of 1 mark) **(05)**

1. Define: Simple Random Sampling
2. Write the uses of χ^2
3. Write any two difference between Large Sample Tests and Small Sample Tests
4. What is the total area under the normal curve?
5. What is Null Hypothesis?

C). Direct questions. (Each of 1 mark) **(05)**

1. The Sum of two independent Normal Variates is also a Normal Variate (True/False)
2. Write any two limitations of Random Sampling
3. For a Normal Distribution, if the first and third Quartiles are 20 and 40 respectively then find its median.
4. What is the Degree of Freedom in r*c contingency table?

5. How many Samples of size 2 can be taken, without replacement from 5 Observations of the Population?

Q.2 Answer the following questions.

A). The Average profit of a business man is Rs. 120 and the Standard Deviation of the profit is 15.can it be reasonably regarded for a large population with mean 100? (Value of z(1.33) = 0.4082) **(07)**

B). A Die is thrown for 300 times and the following distribution is obtained. Can the Die be regarded unbiased. (Table Value = 11.07) **(08)**

Number on the Die	1	2	3	4	5	6
Frequency	41	44	49	53	57	56

Q.3 Answer the following questions.

A). The average life of 150 electric bulbs of a company A is 1400 hours with a Standard Deviation of 120 hours while the average life of 200 electric bulbs of company B is 1200 hours with a standard Deviation of 80 hours. Is the difference between the average lives of the bulbs significant? **(07)**
(Table Value = 1.96)

B). A population is divided in three strata. If 10, 6, 3 units are taken respectively from strata, find the Variance of stratified mean. Also find the Population Mean. The information is as follows: **(08)**

Stratum	No. of units in the Stratum	Stratum Mean	Stratum Variance
1	60	8	12
2	30	6	10
3	10	9	4.5

Q.4 Attempt any two questions. (Each of 7.5 mark) **(15)**

1 Two random samples of sizes 9 and 7 respectively are drawn from two different populations. The means of the samples are 196.4 and 198.8 respectively. The standard deviation of sample 1 is 26.94 and sample 2 is 18.73 Test the hypothesis that the population means are equal.(Table Value = 2.145)

2 Fit a straight line trend to following figures of production of sugar factory:

Year	2001	2002	2003	2004	2005	2006	2007
Production	80	90	92	83	94	99	92

3 The 3 samples given below are obtained from normal populations with equal variances .construct an ANOVA table and Test the hypothesis at 5% level that the population means are equal. (Table Value = 3.88)

Sample I	Sample II	Sample III
8	7	12
10	5	9
7	10	13
14	9	12
11	9	14

4 A coin is tossed 900 times. Find the probability that the number of heads is between 435 and 465. (Value of z(1.03) = 0.3485)