

Seat No: _____

Enrollment No: _____

PARUL UNIVERSITY
FACULTY OF MANAGEMENT
BBA/MBA MID-SEM 2016 - 17 Examination

Semester: 4th
Subject Code: 06191256
Subject Name: BUSINESS STATISTICS –II

Date: 17/04/2017
Time: 2hr:00min
Total Marks: 50

Instructions

1. Attempt all questions from each section.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Write section-A, section-B on separate answer sheets.

SECTION-A-25 Marks

- Q.1 (a) MCQ's(One Mark Each) (03)**
- 1) Total area under the normal curve is _____.
 - 2) _____ and _____ are the parameters of Normal Distribution.
 - 3) If the population is divided into different parts, such that each part is internally homogeneous. These homogeneous parts of the population are known as _____.

- Q.1 (b) Definition (One Mark Each) (03)**
- 1) Stratified random sampling
 - 2) Discrete random variable
 - 3) Standard normal variate

- Q.2 For studying a characteristics the observations of a population are 10, 12, 20, 22, 26. How many samples of size 2, without replacement can be taken from it? Making a list of all the samples verify the following results: (06)**

(i) $E(\bar{y}) = \bar{Y}$

(ii) $V(\bar{y}) = \left(\frac{N-n}{N}\right) \cdot \frac{S^2}{n}$

(iii) $E(s^2) = S^2$

- Q.3 (a) In a normal distribution 31% of the observation are less than 45 and 8% are more than 64. Find mean and S.D of the distribution. (04)**

- Q.3 (b) Give the difference between sample survey and population survey. (03)**

OR

- Q.3 (b) The average height of a group of soldiers is 68.22" and the variance of height is 10.89. Out of 1000 soldiers how many soldiers do you expect to be at least 6 feet tall ! (03)**

- Q.4 The average marks of 400 students in statistics is 52 and S.D of the marks is 8. If (06)**

- (i) the standard of passing is of 40 marks,
- (ii) the student securing marks between 48 and 60 are given second class,
- (iii) at least 66 marks are necessary for getting distinction.

Find the number of students failing in the examination, getting second class and getting distinction.

SECTION -B -25 Marks

- Q.1 (a) MCQ's(One Mark Each) (03)**
- 1) Standard error of large sample for significance of difference between two mean is _____.
 - 2) Degree of freedom of $\bar{x} = \frac{\sum x_i}{n}$ is _____.
 - 3) When $n \rightarrow \infty$, t distribution tends to _____ distribution.

- Q.1 (b) Definition (One Mark Each) (03)**
- 1) Degree of freedom
 - 2) Null Hypothesis
 - 3) Type-I error

- Q.2 (a) The mean of a random sample of 1000 units is 17.6 and the mean of another random sample of 800 units is 18. Can it be concluded that both the samples come from the same population with S.D.=2.6. (03)**

- Q.2 (b) A sample of 400 students have a mean height of 171.38 cm. Can it be reasonably regarded as a random sample from a large population with mean height 171.17 and standard deviation 3.3 cm? (03)**

- Q.3 (a) A sample of 4 observations from a normal population gave the following results: $\sum x_i = 7, \sum x_i^2 = 15$. Test the hypothesis that the mean of the population is 2. (04)**

- Q.3 (b) Give the difference between Large sample Tests and Small sample Tests. (03)**

OR

- Q.3 (b) The sales data of an item in six shops before and after a special promotion campaign are as under: (03)**

Shops	A	B	C	D	E	F
Before campaign	53	28	32	48	50	42
After campaign	58	32	30	50	56	45

Can the campaign be judged as success. Test at 5% level of significance.

- Q.4 Two horses A and B were tested for running a particular track. The time (in seconds) taken by them are given below: (06)**

Horse A	28	30	32	33	33	29	34
Horse B	29	30	30	24	27	29	

Can it be concluded that horse A is faster than horse B.