PARUL UNIVERSITY
FACULTY OF MANAGEMENT
BBA- Internal Examination

Semester: 4th   **Date: 31/03/2018**
Subject Code: 06191256   **Time: 1 hr: 30min**
Subject Name: Business Statistics-II   **Total Marks: 30**

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 (a) MCQ's: (05)
1 The mean and standard deviation of standard normal distribution is
   (a) 1, 0   (b) 0, 1
   (c) 1, 1   (d) 0, 2

2 When n is very large and p and q are not very small, Binomial distribution tends to
   (a) Normal distribution   (b) Exponential distribution
   (c) Poisson distribution   (d) Uniform distribution

3 The total area under a normal curve is
   (a) 95.47   (b) 10
   (c) $x - 1.96\mu$ (d) 1

4 In Sampling without replacement the total number of samples each of size n drawn from population of size N is
   (a) $^{N}P_n$ (b) N^n
   (c) $^{N}C_n$ (d) n^N

5 The population is not homogenous, and then which method of sampling will be used?
   (a) Simple random sampling   (b) Sampling with replacement
   (c) Sampling without replacement   (d) Stratified random sampling

(b) Do as Directed: (05)
1 Write Probability function of Uniform distribution
2 What is mean and standard deviation of exponential distribution.
3 Define: Sampling.
4 Define: Simple random sampling.
5 Define: Stratified random sampling.

Q.2 (a) Suppose the amount of time it takes to assemble a plastic module ranges   (04)
from 27 to 39 seconds and that assembly times are uniformly distributed.
Describe the distribution. What is the probability that a given assembly
will take between 30 and 35 seconds? What is the probability that a given
assembly will take time less than 30 second?

(b) The weights of 4000 girls of university are normally distributed. The   (03)
mean and S.D of weights are 95 lbs. and 7.5 lbs. find (i) how many girls
weight between 100 and 110 lbs. (ii) exactly 95 lbs.

Q.3 (a) A population is divided in three strata as follows (04)

Stratum	N_h	S_h
I	400	10
II	200	8
III	400	6

If 10% sample is to be taken, then find variance of stratified mean with optimum allocation.

(b) State the characteristics of a good sample. (03)

Q.4 Answer the following Questions(Attempt any two) (06)

(a) Give mathematical form of normal distribution. State its properties.
(b) Explain Lottery method for random sampling.
(c) From a population of observation 10, 14, 20 and 36. Take all possible samples of size 2 with replacement from population and verify the following results.

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

(ii) $V(\bar{y}) = \dfrac{\sigma^2}{n}$