

PARUL UNIVERSITY
FACULTY OF MANAGEMENT
MBA Summer 2018 - 19 Examination

Semester: 1
Subject Code: 06200103
Subject Name: Business Statistics

Date: 04/05/2019
Time: 10:30am to 1:00pm
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.

1 Do as Directed.**A). Multiple choice type questions/Fill in the blanks. (Each of 1 mark) (05)**

1. _____ level of data is used for ranking purpose.

a) Nominal	c) Interval
b) Ordinal	d) Ratio
2. A graphical technique used for displaying problem causes in quality control – especially for representing different *causes* for defects in production of a product is _____.

a) Pareto Analysis	c) Linear Plot analysis
b) Pie chart Analysis	d) Polygon chart analysis
3. Five organizations are rated on a scale of 5 by a rating agency as follows: 3, 2, 5, 1, 2. The standard deviation of the rating is :

a) 1.36	c) 2.36
b) 3.36	d) 4.36
4. One of the following is not a random sampling technique:

a) Convenience Sampling	c) Cluster Sampling
b) Sequential Sampling	d) Stratified Sampling
5. The non-parametric test used to check randomness of sample collection is:

a) Kruskal-Wallis test	c) Spearman Rank Correlation test
b) Wicoxon test	d) Runs test

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

1. Skewness
2. Bayes' rule
3. Coefficient of Variance
4. Degree of Freedom
5. Continuous Distribution

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

1. Explain the term "Kurtosis".
2. What are the different unweighted and weighted Index Numbers?
3. List five probability distributions.
4. What is chi-square test of independence?
5. What is Poisson distribution?

Q.2 Answer the following questions.

A). What are the different data levels? Discuss each one of them with an example. (07)

B). Discuss the technique of Analysis of Variance (ANOVA) with an example. (08)

Q.3 Answer the following questions.

A). Explain Random and Non-random Sampling Techniques. (07)

- B).** A Digital Marketing Company – to understand the relation between traffic on a website and sales, has observed the following data: **(08)**

Website traffic (crores)	Sales (Rs. crores)
2	5
3	5
5	7
6	8
7	9

Perform a Linear Regression analysis to find out:

- The correlation coefficient
- The slope of the regression model
- The intercept of the regression model
- The regression model equation

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

- A Financial Executive has got the following report on the stock price variation in Rs. Per day and the corresponding frequencies.

Stock Price (Rs./day)	Frequency (No. of Days)
0-10	4
10-20	8
20-30	12
30-40	9
40-50	4
50-60	3

- Find out the Sample mean
 - Find out the Mean absolute deviation
 - Find out the Sample Variance
 - Find out the Sample Standard Deviation
 - Find out the sample coefficient of Variance
- The following cross-tabulation represents a group of employees classified in terms of their grades and gender..

	Male	Female
G-I	24	16
G-II	10	30
G-III	26	14

If a person is selected randomly from the employees, find:

- The probability that the person selected is a female employee
 - The probability that the person selected is a male working at level G-II
 - The probability that the person selected is either a grade G-III person or a female
 - The probability that the person selected either belongs to grade G-I or G-III
- In a selection process of a top multinational organization, the chances of a person getting selected is 30% and selection process follows Binomial distribution. Suppose 6 candidates appear for the selection process, then find out the probability that:
 - Exactly three candidates get selected
 - None of the candidates get selected
 - Explain the smoothing techniques used in Forecasting.