**Registration No :**

Total Number of Pages : 02

MBAP
18PTMNG303

3rd Semester Regular Examination 2019-20
BUSINESS RESEARCH
BRANCH : MBA(PT)
Max Marks : 100
Time : 3 Hours
Q.CODE : HR701
Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.
The figures in the right hand margin indicate marks.

**Part-I**

Q1      Only Short Answer Type Questions (Answer All-10)      (2 x 10)
- a) Give a comprehensive definition of the term research.
- b) State the necessity of defining a research problem.
- c) Write any two characteristic of good research design.
- d) How Physical sciences differ from Social Sciences in objectivity?
- e) State the meaning of secondary data.
- f) What does the measure of dispersion indicate?
- g) Give a classification of nonparametric test.
- h) State the applications of Z test.
- i) State the basic difference of one way and two way ANOVA.
- j) State the precautions to be taken while writing a research report.

**Part-II**

Q2      Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)      (6 x 8)
- a) "The research process involves a series of interrelated and intricate steps". Discuss this statement with reference to the research process.
- b) Differentiate between Exploratory and Descriptive research design.
- c) What is a hypothesis? .What characteristics it must possess in order to be good research hypothesis?
- d) Differentiate between probability and non probability sampling techniques.
- e) What is a measurement? What are the characteristics of the measurement?
- f) What are the guiding considerations in the construction of questionnaire?
- g) The weight of electrodes purchased by a foundry follows normal distribution. The sales manager of the vendor firm claims that the mean height of the electrodes is at least 125 gm. The quality manager of the foundry wants to verify this claim. So he has taken a sample of 16 electrodes. The mean and variance of the electrodes in the sample are found to be 120 gm and 54 gm. respectively. Verify the claim of the sales manager at a significance level of 0.01.
$[Given, t_{15}(0.01) = 2.602\,]$
- h) The daily demand of a product seems to follow uniform distribution. The observed frequency of daily demand values are summarized in the following table:

| Demand (Units): | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 |
|---|---|---|---|---|---|---|---|---|---|---|
| Observed Frequency: | 18 | 15 | 12 | 15 | 11 | 14 | 17 | 15 | 19 | 14 |

Check whether the given data follow uniform distribution at a significance level of 0.01.
$[Given \chi^2{}_8(0.01) = 20.092, \chi^2{}_9(0.01) = 21.66\ and\ \chi^2{}_{10}(0.01) = 23.20]$

i) A manufacturer of light bulbs claims that on the average 2% of the bulbs manufactured by his firm are defective. A random sample of 400 bulbs contained 13 defective bulbs. On the basis of this sample, can you support the manufacturer's claim at 5% level of significance?

j) Write a short note on Factor analysis.

k) What are the characteristics and functions of a research report?

l) Give an account of the contents of a research report.

**Part-III**

**Only Long Answer Type Questions (Answer Any Two out of Four)**

**Q3** State the format of a research proposal. Develop research proposal for evaluating the consumer satisfaction study of a popular brand of edible oil. **(16)**

**Q4** The following are the final examination grades of samples from three groups of students who were taught communication English by three different methods: class room instruction and language laboratory, only class room instruction and only self study in language laboratory. **(16)**
First Method:    94, 88, 91, 74, 87, 97
Second Method: 85, 82, 79, 84, 61, 72, 80
Third Method:    89, 67, 72, 76, 69
User H-test at the 0.05 significance level to test the null hypothesis that the three methods are equally effective.
$$[Given \chi^2_2(0.05) = 5.991]$$

**Q5** Use the following data to compare four treatments : **(16)**

| Treatment 1: | 3 | 5 | 1 | 6 | |
|---|---|---|---|---|---|
| Treatment 2: | 2 | 4 | 6 | 5 | 3 |
| Treatment 3: | 1 | 7 | 5 | 4 | 6 |
| Treatment 4: | 3 | 2 | 4 | | |

Use the analysis of variance at the 0.05 level of significance and determine whether or not the treatment means differ significantly. $[Given\ F_{3,13}(0.05) = 3.41]$

**Q6** What is the significance of using multiple discriminate analysis? Explain the technical details involved in such a analysis **(16)**