

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination – May, 2017

Program/course: BBA –DM,AM,RM

Subject: Research Methodology

Code : BBCQ123

No. of page/s: 4

Semester – **IV**

Max. Marks : 100

Duration : 3 Hrs

Statistical Table : Chi-square and t-Test will be provided

Section A

Answer the following in True and False

(2 X 10 =20 Marks)

1. Representativeness is essential for probability sampling.
2. Research design is not required for research.
3. Non sampling errors do not affect the research output.
4. Alternative hypothesis - Statement contradictory to the null hypothesis (will always contain an inequality)
5. Type I errors occurs when null hypothesis is true and we reject it.
6. Sampling error is affected by sample size.
7. Report writing and interpretation are not at all required in Research Process.
8. Hypothesis means mere assumptions or supposition which are to be proved or disproved.
9. Variables, Population are only required for hypothesis.
10. Non-parametric test is a Z test.

Section B

Answer the following questions briefly . Any four

(4 x 5=20 Marks)

1. What is Null and Alternate hypothesis. Give example.
2. You are given a population with SD of 8.6. Determine the sample size needed to estimate the mean population within +0.5 and -0.5 with 99 percent confidence level. (99% Confidence $Z=2.575$)
3. A manager at department store would like to study women's spending per year on cosmetics. He is interested in knowing the population proportion of women who purchase their cosmetics primarily from his store. If he want to have 90% confidence of estimating the true proportion to be with +0.045 and -0.045, what sample size is needed. (90% Confidence $Z=1.645$).
4. A consumer electronics company wants to determine the job satisfaction levels of its employees. For this they ask a simple question ' Are you satisfied with your job'? It was estimated that no more than 30 % of the employees would answer yes. What should be the sample size for this company to estimate the population proportion to ensure a 95%

confidence in result and to be within 0.04 of the true population proportion?
(95 % Confidence = $Z=1.96$)

5. What is Type I and Type II Error?

Section C

Answer the following questions briefly.

(3X10=30 Marks)

1. What is sampling and non-sampling errors. Briefly point out the various sources of non-sampling errors.
2. Suppose we are interested in a population of 20 industrial units of the same size, all of which are experiencing excessive labour turnover problems. The past records show that the mean of the distribution of annual turnover is 320 employees, with a standard deviation of 75 employees. A sample of 5 of these industrial units is taken at random which gives a mean of annual turnover as 300 employees. Is the sample mean consistent with the population mean? Test at 5% level significance for Z Test
3. A sample of 400 male students is found to have a mean height 67.47 inches. Can it be reasonably regarded as a sample from a large population with mean height 67.39 inches and standard deviation 1.30 inches? Test at 5% level of significance for Z Test

Section D

Answer the following questions briefly.

(2X15=30 Marks)

1. Raju Restaurant near the railway station at Falna has been having average sales of 500 tea cups per day. Because of the development of bus stand nearby, it expects to increase its sales. During the first 12 days after the start of the bus stand, the daily sales were as under:

550, 570, 490, 615, 505, 580, 570, 460, 600, 580, 530, 526

On the basis of this sample information, can one conclude that Raju Restaurant's sales have increased?

Use 5 per cent level of significance for t-Test

- 2.

A die is thrown 132 times with following results:

| | | | | | | |
|------------------|----|----|----|----|----|----|
| Number turned up | 1 | 2 | 3 | 4 | 5 | 6 |
| Frequency | 16 | 20 | 25 | 14 | 29 | 28 |

Is the die unbiased?