



Class: Ph.D. Course Work [Credit – 04]

Subject: Course- 1: Research Methodology (700001)

Assignment No. 1

Q. 1 Explain meaning and purpose of Research.

Q. 2 Explain errors in selecting research problem.

Q. 3 Differentiate between following types of Research:

- i) Pure and Applied Research
- ii) Historical and Futuristic Research
- iii) Analytical and Synthetic Research
- iv) Experimental and Desk Research
- v) Qualitative and Quantitative

Q. 4 Discuss the benefits of digital data collection over traditional method of data collection.

Q. 5 The accuracy specified for a thermometer ranging 0° to 100° C is 2 %. Find the maximum error in measurement in $^{\circ}$ C if it gives reading of 90° C.

Q. 6 Write a shot note on: “Linear Scaling for Receiver and Fidelity Instrument”.

Q. 7 Explain how would you work out the following statistical measure often used by researcher?

- i) Coefficient of variation
- ii) Arithmetic average
- iii) Coefficient of Skewness
- iv) Regression equation of X on Y
- v) Coefficient of $\gamma_{yx2,x1}$

Q. 8 What do you mean by Static characteristics of instruments? Discuss the following elements of static characteristics of instruments:

- i) Range,
- ii) Sensitivity
- iii) Resolution
- iv) Hysteresis
- v) Linearity
- vi) Accuracy
- vii) Precision

Q. 9 Use multiple Linear regression to fit:

X_1	0	0	1	2	0	1	2	2	1
X_2	0	2	2	4	4	6	6	2	1
Y	15	19	12	11	24	22	15	5	19

Where; X_1 and X_2 are input variables, Y is output variable.