

Class: Ph.D. Course Work

Subject: Research Methodology (700001)

Assignment No. 1

Q. 1 Explain the source, scope and objective of Research problem.

Q. 2 What are the characteristics of a good research. Explain errors in selecting research problem.

Q. 3 Differentiate between following types of Research:

- i) Need based research and Fundamental research
- ii) Historical and Futuristic Research
- iii) Analytical and Synthetic Research
- iv) Experimental and Desk Research
- v) Qualitative and Quantitative

Q. 4 Explain role of DSP in Data collection which contains the noise.

Q. 5 Explain with suitable system(e. g. Level/pressure/temperature etc.) the parameters and cautions during the data collection to the computer and feedback signal to the system(actuators) from computer.

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 $\gamma_{yx^2.x1}$

Q. 8 What do you understand by State vector machines? Explore the uncertainty analysis.

Q. 9 Use multiple Linear regression to fit:

X₁	0	0	1	2	0	1	2	2	1
X₂	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.