

## **PhD in Educational Technology**

### **PhD Entrance Test (PET)**

**100 marks**

### **Course I Research Methodology**

#### **Course Content**

**Course Objectives:** Learners will be able to

- ◆ Select appropriate Research Methodology
- ◆ Prepare a Research Proposal on a selected topic
- ◆ Write a research report using the international specifications
- ◆ Prepare a Bibliography

#### **Module 1: Research in Education**

**Objectives:** Learners will be able to

- ◆ Describe various types of research
- ◆ Select appropriate sources of information for identifying a research problem
- ◆ Select appropriate type of research for the problem selected for research
- ◆ Prepare a Bibliography

#### **Content:**

- What is Research?
- Types of Research (Pure, Applied, Action Research)
- Steps in conducting research
- Basic Concepts in Research
- APA in Educational Research
- Literature and Research Review

#### **Module 2: Methodology of Research**

**Objectives:** Learners will be able to

- ◆ State characteristics of research methods
- ◆ Select appropriate research design
- ◆ Explain various Experimental designs

#### **Content:**

- Types of Research (Qualitative, Quantitative, Mixed Research, Action Research)
- Experimental research: Characteristics, Experimental Research Designs, Threats to Internal and External Validity
- Survey Research: Characteristics, Procedures
- Causal Comparative and Co-relational Studies
- Ex-Post-Facto Research
- Evaluation studies
- Characteristics of Qualitative Research
  - Types of Qualitative Research: Ethnography, Content Analysis

### **Module 3: Sampling, Instruments of Data Collection and Research Proposal**

**Objectives:** Learners will be able to

- ◆ Choose appropriate sampling procedures for a given research
- ◆ Prepare at least 2 instruments and 2 tests for data collection
- ◆ State the procedure for data collection
- ◆ Prepare a plan for data analysis
- ◆ Prepare research proposal

**Content:**

- Sampling
  - Sampling Procedure: Types
  - Procedure for Sample Selection
- Data Collection:
  - Instruments and Techniques of data collection
    - Rating scale, Checklist, Questionnaire, Interview Schedule, etc.
  - Procedure for development of the instrument
  - Procedure for data collection
  - Scoring Procedure
  - Planning for data Analysis: coding of the responses
- Research Proposal

### **Module 4: Statistical Techniques and Report Writing**

**Objectives:** Learners will be able to

- ◆ Compute measures of Central Tendency
- ◆ Compute measures of Variability
- ◆ State statistical significance of the techniques used.
- ◆ Test hypothesis using appropriate statistical technique.
- ◆ Write a research report using the international specifications

**Content:**

- Statistical techniques
  - Types of Data (Nominal, Ordinal, Interval and Ratio Scale)
  - Measures of Central Tendency: Mean, Median, Mode
  - Normal Distribution
  - Measures of Variability (Range, rank, percentile rank, Standard Deviation)
  - Testing hypothesis for Correlation (Coefficient of Correlation) - using software for hypothesis testing
  - Testing hypothesis for Comparison (Chi square, t-ratio, One-way ANOVA) - using software for hypothesis testing
- Report writing