

SYLLABUS FOR COMPUTER BASED RECRUITMENT TEST (CBRT)
FOR THE POST OF ASSISTANT PROFESSOR FOR RESEARCH DEVELOPMENT
AND INNOVATION FOR STATE HIGHER EDUCATION COUNCIL
UNDER
DIRECTORATE OF HIGHER EDUCATION
(Advt No. 05 Year 2019)

I. General English including Grammar - 05 marks

II. General Knowledge, Current Affairs and Events of National and International Importance - 10 marks

III. Logical Reasoning and Analytical Ability - 10 marks

IV. Core: - 50 marks

- **Foundations of Research:**

Meaning of Research, Objectives of Research, Motivations in Research, Utility, Types of Research, Research Approaches, Significance of Research, Concept of theory, empiricism, deductive and inductive theory. Characteristics of scientific method – Understanding the language of research – Concept, Construct, Definition, Variable. Research Process, Criteria of Good Research.

- **Quantitative Research:**

Variables, Hypothesis, Measurement, Types of data and scales, Sampling techniques, Probability, Probability Distributions, Hypothesis Testing, Level of Significance and Confidence Interval, t-test

- **Qualitative Research:**

Types of approaches – Narrative, phenomenological, grounded theory, ethnographic, case study, Data Sources: Interviews, Focus groups, observations, approaches to analysis of qualitative data –coding, content analysis

- **Measurement:**

Concept of measurement, Problems in measurement in research – Validity and Reliability. Levels of measurement – Nominal, Ordinal, Interval, Ratio.

- **Sampling:**

Sample, Sampling Frame, Sampling Error, Sample Size. Characteristics of a good sample. Probability and Non-Probability Sampling

- **Descriptive Statistics:**

Measurement Scales, Sources of error in measurement. Measures of Central Tendency (Mean, Median, Mode), Measures of dispersion (range, mean deviation, standard deviation), Graphical representation of Data.

- **Inferential statistics:**

Normal Probability Curve, Standard error, Type I and Type II errors, Estimating Population Means

- a. Correlations: Rank Difference Method, Pearson's Product Moments Correlation Significance of correlation. Concept of Variance. Other methods of Correlation - Partial and Multiple correlation, Biserial, Point Biserial, tetra choric and Phi correlation. Regression and Multiple Regression equations
- b. Sampling Distribution, Null Hypothesis- Alternative Hypothesis. Testing the Significance of difference between means (z and 't' test)
- c. Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA)
- d. Factor Analysis and Path Analysis

- **Non Parametric Statistics:**

Sign Test, Mann-Whitney U Test, Chi Square test

- **Data Analysis:**

Univariate analysis (frequency tables, bar charts, pie charts, percentages), Bivariate analysis

- **Recent Developments and Innovations in the field of Higher Education**

Note:

Duration for C.B.R.T : 75 Minutes

Maximum Marks for C.B.R.T : 75 Marks