CERTIFICATE/ DIPLOMA IN STATISTICAL ANALYSIS AND RESEARCH METHODOLOGY

SARM 4: TIME SERIES ANALYSIS AND PROBABILITY DISTRIBUTIONS

Max. Marks: 100
External: 70
Internal: 30
Pass: 40%
Credits: 6

OBJECTIVE:

Give the knowledge regarding probability theory of outcome of real-life experiments through statistical distributions.

INSTRUCTIONS FOR THE PAPER SETTER/ EXAMINER:

1. The syllabus prescribed should be strictly adhered to.
2. Question Paper will have 70 Multiple Choice questions (MCQs) and four choices of answers will be there covering the entire syllabus. Each question will carry 1 mark. All questions will be compulsory; hence candidates will attempt all the questions.
3. Paper-setters/Examiners are requested to distribute the questions from section A and Section B of the syllabus equally i.e., 35 questions from section A and 35 questions from Section B.
4. The examiner shall give clear instructions to the candidates to attempt questions.
5. The duration of each paper will be two hours.

INSTRUCTIONS FOR THE STUDENTS

The question paper shall consist of 70 Multiple Choice questions. All questions will be compulsory and each question will carry 1 mark. There will be no negative marking. Students are required to answer using OMR (Optimal Mark Recognition) sheets.

SECTION A

Unit 1: Time series analysis: Introduction, Uses and Importance, Components: Secular trend, short term variations, Random and irregular trends

Unit 2: Measurements of Trend: Graphic, Semi-average, Least square and Moving Average, Merits and Demerits

Unit 3: Basics of Probability: Addition Law, Conditional probability, Multiplication law

SECTION B

Unit 4: Probability Distribution: Binomial distribution and Poisson distribution

Unit 5: Normal distribution- Meaning, Properties and fitting

Unit 6: Interpolation and Extrapolation.

Note: Statistical analysis should also be taught with the help of MS Excel, SPSS or any other related software tool.

Suggested Readings

- A.M Goon, M.K Gupta and B. Dasgupta, fundamental of statistics Vol-I, World press Calcutta
- Anderson, D.R.; Sweeney, D.J. and Williams, T.A., "Statistics for Business and Economics", 2nd edition (2011), Thompson, New Delhi.
- Gupta SC: Fundamental of statistics, S. Chand & Company. New Delhi
- Gupta, SP: Statistical Methods, S. Chand & Company. New Delhi
- Kothari, C. R., "Research Methodology", 2nd Edition (2008), New Age International.
- Meyer, P.L. (1990): Introductory Probability and Statistical Applications, Oxford & IBH Pub.
- Monga, GS: Mathematics and Statistics for Economics, Vikas Publishing house, New Delhi.
- Rohatgi, V. K. and Saleh, A.K.M.E. (2010): An Introduction to Probability Theory and Mathematical Statistics, Wiley Eastern.