RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER

SYLLABUS FOR SCREENING TEST FOR THE POST OF STATISTICAL OFFICER, AGRICULTURE DEPARTMENT

1. **Descriptive Statistics**: Types of Data, Collection, Classification, Tabulation and Diagrammatic Presentation of data. Measures of Central Tendency, Dispersion, Moments, Skewness and Kurtosis.

2. **Correlation and Regression**: Karl Pearson and Rank correlation coefficients, Multiple and Partial Correlation, Linear Regression. Method of Least Squares.


4. **Probability Distributions**: Uniform, Binomial, Negative Binomial, Poisson, Exponential, Rectangular, Normal, Gamma, Cauchy, Beta Distributions with properties and applications. Central limit theorem.

5. **Sampling Distributions**: Chi-square, t and F Distributions and their applications.


8. **Testing of Hypothesis**: Concept of Hypothesis, Types of error in testing, Critical Region and level of significance, p values, Neyman Pearson Lemma. One and two tailed tests based on small and large samples.

9. **Non-Parametric Tests**: Run, Sign, Median, and Kolmogorov- Smirnov one and two sample tests.

10. **Design of Sample Survey**: Sampling Unit, Sampling frame, Sampling fraction, Sampling with and without replacement, Population Parameter and Sample estimator, efficiency, accuracy and precision, sampling and non sampling errors, Simple random sampling, Probability proportion to Size with replacement, Sampling with varying probability- with and without replacement, stratified random sampling, systematic sampling, cluster sampling, multistage sampling, ratio and regression methods of estimation.

11. **Design of Experiments**: Analysis of variance for one way and two way classified data, Transformation of data, Uniformity trials, Principles of Design of experiments. Completely Randomized Design,
Randomized Block Design, Latin Square Design, missing plot techniques. $2^n$ factorial experiments, Complete and Partial confounding. Split Plot and Strip Plot designs, BIB and PBIB designs. Analysis of covariance.


13. **Index Number**: Uses, types and limitations of index numbers, construction of index numbers, simple and weighted aggregate method, Simple and weighted average price-relatives, Chain base index numbers, Base shifting, Splicing and Deflating of Index numbers, Cost of Living index numbers.


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**Pattern of Question Paper** :
1. Objective Type Paper.
2. Maximum Marks : 100
3. Number of Questions : 100
4. Duration of Paper : Two Hours.
5. All Questions carry equal marks.
6. There will be **Negative Marking**.

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