The document is in Nepali. It describes the assessment method for a program, including two phases: a written examination (First Phase) and an interview (Second Phase). The written examination includes multiple-choice questions and short answers. The interview is oral. The total marks are 200 for the written examination and 30 for the interview. The assessment criteria and methods are detailed within the document.
Agricultural Research and Development
(Common For all Sub-Groups)

1. Constitution of Nepal: Food, agriculture and natural resources related

2. Current National Agricultural policies and plans: National Agriculture Policy, Agricultural biodiversity policy, Climate change policy, Agriculture Development Strategy (ADS), National land use Policy, Seed vision, periodic agriculture development plan

3. NARC Act, NARC bylaws, Structure and responsibilities of Nepal Agricultural Research Council (NARC)

4. International Agricultural Research Organizations - CGIAR and IARCS: CIAT, CIMMYT, CIP, ICRISAT, ICARDA, World Fish, ICRAP, IFPRI, IITA, ILRI, Bioversity international, IRRI, IWMI, AVRDC, ICIMOD, IFDC, IFAD, FAO

5. Geography and Agro-climate condition of Nepal

6. History of Agriculture Development in Nepal

7. Agriculture Extension System in Nepal in the past and present scenario

8. Global warming, Climate Change and its effects in Agriculture sector

9. Major functions, achievements and impact of agriculture research, extension and education in Nepal

10. Agriculture research and development: History, achievements, constraints and scope

11. Agricultural statistics: production, productivity, import/export trend of major agricultural commodities

12. Use and misuse of insecticide and pesticide in agriculture sector
1. Introduction
   1.1 Basic concepts of statistics
   1.2 Statistics and biometrics
   1.3 Role of biometrics in agricultural research
   1.4 Measurement scales
   1.5 Variable/ observation and attribute
   1.6 Population and sample

2. Classification and Summarization of Data
   2.1 Data collection
   2.2 Frequency distribution
   2.3 Diagram and graphs

3. Descriptive Statistical Measures
   3.1 Measures of central tendency
   3.2 Measures of dispersion
   3.3 Measures of skewness and kurtosis

4. Probability and Distribution
   4.1 Elementary probability and probability theory
   4.2 Normal distribution
   4.3 Binomial distribution

5. Sampling and Sampling Distribution
   5.1 Concept of sampling, sampling error and non sampling error
   5.2 Simple random sampling, cluster, stratified and systematic sampling
   5.3 Sampling distribution of mean and proportion
   5.4 Standard error and concept of central limit theorem

6. Estimation and Testing of Hypothesis
   6.1 Point estimation and their properties
   6.2 Confidence interval estimation and its interpretation in different scenario
   6.3 Hypothesis testing
   6.4 Null and alternative hypothesis
   6.5 Type I and type II error in testing of hypothesis
   6.6 Critical region, level of significance, power of the test
   6.7 One and two tailed tests
   6.8 Degrees of freedom
   6.9 Testing of hypothesis in different scenario
6.10 Critical value approach and p-value approach for decision making in testing of hypothesis

7. Parametric Tests
   7.1 Z-test
   7.2 Independent t-test
   7.3 Paired t-test
   7.4 F test for test of significance of variance and means
   7.5 Applications of different parametric tests in agriculture data

8. Non-parametric Tests
   8.1 Chi-square test,
   8.2 Mann Whitney U-test
   8.3 Wilcoxon’s Signrank test
   8.4 Kruskwallis test
   8.5 Applications of different nonparametric tests in agriculture data

9. Correlation
   9.1 Simple linear correlation
   9.2 Rank correlation
   9.3 Test of significance of correlation coefficient

10. Regression
    10.1 Simple linear regression
    10.2 Multiple linear regression
    10.3 Test of hypothesis for regression coefficient and overall fit of the model
    10.4 Assumptions of linear regression and applications
    10.5 Use and misuse of correlation and regression analysis

11. Experimental Design
    11.1 Basic concepts of statistical models and use of samples
    11.2 Concepts of experimental design, factorial experiments
    11.3 Principles and techniques of planning, establishing and executing field and greenhouse experiments
    11.4 Completely randomized design
    11.5 Randomized complete block design
    11.6 Latin square design
    11.7 Lattice design
    11.8 Factorial experiments
    11.9 Split-plot design
    11.10 Experiment in farmers’ fields
    11.11 Assumptions and applications

12. Special Application of Statistics
    12.1 Statistics in genetics and plant breeding
    12.2 Statistics in livestock and fishery
    12.3 Statistics in social science
13. Understanding of biometrical software

14. Concept of research design, research methods and research methodology

15. Field Plot Technique
   15.1 Size, shape and orientation of plots
   15.2 Border and competition effects
   15.3 Soil heterogeneity
   15.4 Estimation of size of experiments for specified accuracy
   15.5 Sub-sampling plots and yields for laboratory analysis

16. Interpretation of statistical results and report writing

17. Statistical system of Nepal and databases focusing on agriculture research and development