

सामाजिक सुरक्षा कोष
विविध सेवा, योजना तथा तथ्याङ्क समूह, सातौं तह, सहायक निर्देशक पदको खुला र आन्तरिक प्रतियोगितात्मक
परीक्षाको पाठ्यक्रम
द्वितीय पत्र: सेवा सम्बन्धी
खण्ड क- ५० अङ्क

(बस्तुगत बहुवैकल्पिक प्रश्न)

यस खण्डबाट देहाय बमोजिमको संख्यामा वस्तुगत बहुवैकल्पिक प्रश्नहरू सोधिनेछन्।

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| एकाई | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| प्रश्न संख्या | 4 | 5 | 6 | 5 | 5 | 2 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 3 |

1. **Probability and Distribution**
 - 1.1 Basic properties of Probability
 - 1.2 Addition rule of Probability
 - 1.3 Multiplication rule of Probability
 - 1.4 Independent and mutually exclusive events
 - 1.5 Conditional Probability
2. **Random Variables**
 - 2.1 Notion of random variable
 - 2.2 Probability distribution
 - 2.3 Binomial, Poisson and Normal distribution
 - 2.4 Mathematical Expectation
 - 2.5 Distribution of independent random variables
 - 2.6 Notion of likelihood function
3. **Mathematics for Statistics**
 - 3.1 Rates, Ratios and Proportion
 - 3.2 Number system
 - 3.3 Logarithm
 - 3.4 Principle of least square
 - 3.5 Rank of a matrix
 - 3.6 Inverse of a matrix
 - 3.7 Quadratic forms
 - 3.8 Eigen values
4. **Descriptive statistics**
 - 4.1 Measures of Central Tendency
 - 4.2 Measures of Dispersion
 - 4.3 Measures of Kurtosis
 - 4.4 Measures of Skewness
 - 4.5 Measures of positional statistics: Quartile, Decile and Percentile
5. **Correlation and Regression**
 - 5.1 Simple, partial and rank correlation
 - 5.2 Multiple correlation and coefficient of determination
 - 5.3 Simple and multiple regression
 - 5.4 Measures and tests of goodness of fit in regression
 - 5.5 Tests for normality in regression

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6. **Estimation**
 - 6.1 Properties of a good estimator
 - 6.2 Methods of Estimation
 - 6.3 Properties of maximum likelihood estimator
 - 6.4 Best linear unbiased estimator
 - 6.5 Interval Estimation
7. **Hypothesis Testing**
 - 7.1 Simple and composite hypothesis
 - 7.2 Type I and type II error
 - 7.3 Unbiased test
 - 7.4 z, t, chi-square and F tests
 - 7.5 p - value
8. **Sampling Methods and Distributions**
 - 8.1 Simple random sampling
 - 8.2 Stratified random sampling
 - 8.3 Systematic sampling
 - 8.4 Standard errors
 - 8.5 Sampling distribution
 - 8.6 Distribution of sample mean
9. **Time-Series Analysis**
 - 9.1 Trends, seasonal and cyclical variations
 - 9.2 Autocorrelation and its test
 - 9.3 Forecasting
10. **Economics**
 - 10.1 Endogenous and exogenous variables
 - 10.2 Absolute and relative change
 - 10.3 Concept of marginal and elasticity
 - 10.4 Consumption function, saving, capital formation and capital output ratio
 - 10.5 Cobb-Douglas production function
 - 10.6 Gini coefficients
11. **Data Collection and Processing Activities**
 - 11.1 Data gathering process
 - 11.2 Questionnaire design
 - 11.3 Methods and techniques of data summarization/analysis
 - 11.4 Errors in survey and census: Control and measurement of errors
 - 11.5 Quality evaluation of data
12. **National Accounts Statistics of Nepal**
 - 12.1 System of National Accounts (SNA) : Importance and uses
 - 12.2 Macroeconomic aggregates – Nominal and Real GDP, GNI, Consumption, Saving
13. **Population Statistics of Nepal**
 - 13.1 Major sources of population data
 - 13.2 Population censuses of Nepal

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- 13.3 Composition and distribution of population
- 13.4 Fertility, Mortality, Migration
- 13.5 Population growth and population projection of Nepal
- 13.6 Ageing of population
- 14. **Index Numbers**
 - 14.1 Wholesale price, retail price, producers' price
 - 14.2 Consumers Price Index (CPI)
 - 14.3 Manufacturing Production Index
- 15. **Human Development and Poverty Statistics**
 - 15.1 Human Development Index (HDI) and monitoring Poverty
 - 15.2 Sustainable Development Goals
 - 15.3 Major sources of poverty statistics
 - 15.4 Poverty measurement
 - 15.5 Nepal Living Standard Survey (NLSS)

खण्ड ख- ५० अङ्क

विषयगत प्रश्नहरू

- I. Basic Concept (20 Marks)**
 - 1. **Data Collection Processing**
 - 1.1 Data gathering process
 - 1.2 Questionnaire design
 - 1.3 Methods and techniques of data summarization/analysis
 - 1.4 Errors in surveys and censuses: Control and measurement of errors
 - 1.5 Quality evaluation of data
 - 2. **Sampling and Probability Distribution**
 - 2.1 Simple random sampling
 - 2.2 Stratified random sampling
 - 2.3 Systematic sampling
 - 2.4 Cluster sampling
 - 2.5 Standard errors
 - 2.6 Sampling distribution
 - 2.7 Distribution of sample mean
 - 3. **Statistical System of Nepal**
 - 3.1 National Statistical system
 - 3.2 Major statistical agencies
 - 3.2.1 Central Bureau of Statistics and its role as a central statistical agency
 - 3.2.2 Ministries and other government agencies related to statistical activities
 - 3.3 Current Statistical act and statistical regulations, 2041(B.S)
- II. Economic Statistics (20 Marks)**
 - 4. **Economics**
 - 4.1 Endogenous and exogenous variables

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- 4.2 Absolute and relative change
- 4.3 Concept of marginal and elasticity
- 4.4 Consumption function, saving, capital formation, capital output ratio
- 4.5 Macroeconomic aggregates – Nominal and Real GDP, GNI, Consumption, Saving
- 4.6 Revenue statistics
- 4.7 Money and banking statistics
- 4.8 Balance of Payment (BOP)
5. **Index Numbers**
 - 5.1 Wholesale price, retail price, producers' price
 - 5.2 Consumers Price index (CPI)
 - 5.3 Manufacturing Production Index
 - 5.4 Manufacturing Producers Price Index
6. **Industry, Trade and Service Statistics of Nepal**
 - 6.1 Energy statistics
 - 6.2 Environment Statistics
 - 6.3 Irrigation and water statistics
- III Poverty & Social Statistic (10 Marks)**
7. **Poverty and Social Statistic**
 - 7.1 Poverty measurement in Nepal
 - 7.2 Major sources of poverty Statistic
 - 7.3 Poverty measuring practices in Nepal
 - 7.4 Health Indicators
 - 7.5 GER, NER, and other educational statistics
8. **Labor and Employment**
 - 8.1 Labor force, employment, underemployment, unemployment
 - 8.2 Major sources of labor and employment statistics
 - 8.3 Nepal Labor Force Surveys
9. **Population Statistics of Nepal**
 - 9.1 Major sources of population data
 - 9.2 Population censuses of Nepal
 - 9.3 Composition and distribution of population
 - 9.4 Population growth and population projection