

**लोक सेवा आयोग**  
**नेपाल आर्थिक योजना तथा तथ्याङ्क सेवा, तथ्याङ्क समूहको राजपत्राङ्कित तृतीय श्रेणीका पदहरूको खुला र आन्तरिक**  
**प्रतियोगितात्मक परीक्षाको पाठ्यक्रम**

पाठ्यक्रमको रूपरेखा :- यस पाठ्यक्रमको आधारमा निम्नानुसार दुई चरणमा परीक्षा लिइने छ :

प्रथम चरण :- लिखित परीक्षा पूर्णाङ्क :- २००  
द्वितीय चरण :- अन्तर्वार्ता पूर्णाङ्क :- ३०

प्रथम चरण – लिखित परीक्षा योजना (Examination Scheme)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या X अङ्कभार	समय
प्रथम	तथ्याङ्क शास्त्र	१००	४०	वस्तुगत बहुउत्तर (Multiple Choice)	१००X१ = १००	१ घण्टा १५ मिनेट
द्वितीय	समूह सम्बन्धी विषय	१००	४०	विषयगत (Subjective)	१०X१० = १००	३ घण्टा

द्वितीय चरण

विषय	पूर्णाङ्क	परीक्षा प्रणाली
व्यक्तिगत अन्तर्वार्ता	३०	मौखिक

- लिखित परीक्षाको माध्यम भाषा अंग्रेजी वा नेपाली अथवा अंग्रेजी र नेपाली दुवै हुन सक्नेछ ।
- माथि उल्लिखित समूहको पाठ्यक्रमको प्रथम र द्वितीय पत्रका विषयवस्तु फरक फरक हुनेछन् ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- प्रथम तथा द्वितीय पत्रका एकाईहरूको प्रश्नसंख्या निम्नानुसार हुनेछ :

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

- द्वितीय पत्रको विषयगत प्रश्नहरूको स्वरूप निम्नानुसार हुन सक्नेछ :
  - ५.१ लामो उत्तर दिने १० अङ्कका पूरा प्रश्नहरू सोध्न सकिनेछ ।
  - ५.२ एउटै प्रश्नलाई दुई वा दुई भन्दा बढी भागमा (Two or more parts of a single question) विभाजन गरी सोध्न सकिनेछ ।
  - ५.३ एउटा प्रश्न अन्तर्गत दुई वा बढी टिप्पणीहरू (Short notes) सोध्न सकिने छ ।
- प्रथम पत्रमा वस्तुगत बहुउत्तर (Multiple Choice) प्रश्नहरूको उत्तर सही दिएमा प्रत्येक सही उत्तर बापत १ (एक) अङ्क प्रदान गरिनेछ भने गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अर्थात ०.२ अङ्क कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन ।
- यस पाठ्यक्रममा जेसुकै लेखिएको भएता पनि पाठ्यक्रममा परेका ऐन, नियमहरू परीक्षाको मिति भन्दा ३ (तीन) महिना अगाडि ( संशोधन भएका वा संशोधन भई हटाइएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा रहेको सम्झनु पर्दछ ।
- प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको अन्तर्वार्तामा सम्मिलित गराइनेछ ।
- यस भन्दा अगाडि लागू भएका माथि उल्लिखित उपसमूहहरूका पाठ्यक्रमहरू खारेज गरिएका छन् ।
- पाठ्यक्रम लागू मिति :- २०६२/२/२३ देखि

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र आन्तरिक प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

प्रथम पत्र :- तथ्याङ्क शास्त्र

1. Probability and Distribution (5%)
  - 1.1 Basic properties of probability
  - 1.2 Addition rule of probability
  - 1.3 Independent and mutually exclusive events
  - 1.4 Conditional probability
  - 1.5 Multiplication rule of probability
2. Random Variables (15%)
  - 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 (15%)
  - 3.1 Rates, Ratios and Proportion
  - 3.2 Number system
  - 3.3 Logarithm
  - 3.4 Permutation and combination
  - 3.5 Principle of least square
  - 3.6 Rank of a matrix
  - 3.7 Inverse of a matrix
  - 3.8 Quadratic forms
  - 3.9 Eigen values
4. Descriptive statistics (15%)
  - 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, quintile, & decile
  - 4.6 Outliers and their consequences
5. Correlation and Regression (10%)
  - 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
  - 5.6 Logit models
6. Estimation (5%)
  - 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 (5%)
  - 7.1 Simple and composite hypothesis

- 7.2 Type I and type II error
- 7.3 Unbiased test
- 7.4 Likelihood ratio test
- 7.5 z, t, chi-square and F tests
- 7.6 p value
- 8. Sampling methods and Distributions (5%)
  - 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
  - 8.7 Student's t and chi-square distribution
- 9. Time-series Analysis (2%)
  - 9.1 Trends, and seasonal & cyclical variations
  - 9.2 Autocorrelation and its test
  - 9.3 Forecasting
- 10. Economics (3%)
  - 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 (5%)
  - 11.1 Data gathering process
  - 11.2 Questionnaire design
  - 11.3 Methods and techniques of data summarization/analysis
  - 11.4 Errors in surveys and censuses: Control and measurement of errors
  - 11.5 Quality evaluation of data
- 12. National accounts statistics of Nepal (2%)
  - 12.1 System of National Accounts (SNA) – Importance and uses
  - 12.2 Macro economic aggregates – Nominal and Real GDP, GNI, Consumption, Saving,
- 13. Population statistics of Nepal (3%)
  - 13.1 Major sources of population data
  - 13.2 Population censuses of Nepal
  - 13.3 Composition and distribution of population
  - 13.4 Fertility, Mortality, Migration
  - 13.5 Population growth and population projection
- 14. Price and indexes (5%)
  - 14.1 Wholesale price, retail price, producers price
  - 14.2 Consumers Price index (CPI)
  - 14.3 Agricultural Production Index
  - 14.4 Manufacturing Production Index
  - 14.5 Manufacturing Producers Price Index
- 15. Human development and poverty Statistics (5%)
  - 15.1 Latest HD status and poverty situation of Nepal
  - 15.2 Millennium Development Goals
  - 15.3 Major sources of poverty statistics
  - 15.4 Poverty measuring practices in Nepal
  - 15.5 Nepal Living Standard Survey (NLSS)

वस्तुगत बहुउत्तर नमूना प्रश्नहरू (Sample questions)

1. If A and B are mutually exclusive events, then the  $\Pr(A \cap B)$  equals to  
(A) 1 (B) 0 (C) 0.5 (D)  $\Pr(A) \Pr(B)$

**Correct Answer: (B)**

2. The number of parameters in a bivariate normal distribution is  
(A) 2 (B) 4 (C) 5 (D) 3

**Correct Answer: (C)**

3. For any two positive real numbers a and b,  $\log(a + b)$  equals to  
(A)  $\log(a) + \log(b)$  (B)  $\log(a)\log(b)$  (C)  $\log(ab)$  (D) none of them

**Correct Answer: (D)**

4. The sum of square of the deviations is always minimum when they are measured from  
(A) arithmetic mean (B) median (C) mode (D) zero

**Correct Answer: (A)**

5. The value of multiple correlation coefficient always lies between the interval  
(A) [0, 1] (B) [-1, 1] (C) [-1, 0] (D) (0, 1)

**Correct Answer: (A)**

6. The maximum likelihood estimators are always  
(A) consistent (B) unbiased (C) biased (D) none of them

**Correct Answer: (D)**

7. The value of likelihood ratio test criterion lies between the interval  
(A) (0, 1), (B) (0, -1) (C) (-1, 1) (D) (-0.5, 0.5)

**Correct Answer: (A)**

8. The standard error of the sample mean always equals  
(A)  $\sigma^2$  (B)  $\frac{\sigma^2}{n}$  (C)  $\frac{\sigma}{\sqrt{n}}$  (D) none of them

**Correct Answer: (C)**

9. The value of autocorrelation always lies between the interval  
(A) [-1, 1] (B) [-1, 0] (C) [0, 1] (D) (-1, 1)

**Correct Answer: (A)**

10. If r and s correspondingly denote the exponential and geometric growth rates, then  
(A)  $r > s$  (B)  $r < s$  (C)  $r = s$  (D) none of them

**Correct Answer: (B)**

11. Consumption function describes the relationship between  
(A) income and consumption (B) saving and consumption  
(C) demand and consumption (D) none of them

**Correct Answer: (A)**

12. Human Poverty Index is measured on a scale of  
(A) 0 to 1 (B) 0 to 50 (C) 0 to 100 (D) 50 to 100

**Correct Answer: (C)**