Seat No. : _____

AC-106

April-2019

B.Sc., Sem.-IV

CC-205 : Statistics
(Applied Statistics)
(New Course)

Time : 2:30 Hours] **[Max. Marks : 70**

1. (A) Write the following : **14**

(I) Define index numbers. Write the problems based on construction of index numbers.

(II) Define price index number and quantity index number with example. Also give merits and demerits of index number.

OR

(I) Define fixed based and chain based index number. State the difference between fix based and chain based index number.

(II) What is wholesale price index number. Give its merits and demerits.

(B) Answer the following questions in **one** or **two** lines : (Any **4**) **4**

(1) What is a base year ?

(2) Define value index.

(3) Index numbers are described as barometers of economic activity. True or False.

(4) Give the general formula of index number.

(5) Write any one merit of chain base index number.

(6) Explain Time Reversal Test.

2. (A) Write the following : **14**

(I) State Laspeyer's, Paasche's and Fisher's Index numbers. Verify them for both reversal tests of Index numbers.

(II) Discuss construction of cost of living index number. State its uses.

OR

(I) Discuss weighted and unweighted index numbers in detail.

(II) Describe what is meant by base shifting and splicing of index numbers.

(B) Answer the following questions in **one** or **two** lines : (Any **4**) **4**

(1) What is a unit test ?

(2) What is circular test ?

(3) What is link relative ?

(4) State the formula for weighted index number.

(5) State Marshal-Edgeworth index number.

(6) State relation between Fisher's Laspeyer's and Paasche's index numbers.

3. (A) Write the following : **14**

(I) What is meant by time series ? Give its uses.

(II) Explain the components of time series in detail.

OR

(I) Explain the additive and multiplicative model of time series.

(II) What do you understand by seasonal variations in time series ?

(B) Answer the following questions in **one** or **two** lines : (Any **3**) **3**

(1) Define time series.

(2) What is a trend ?

(3) Define cyclic variations.

(4) Give any one merit of principle of least squares.

(5) Give difference between Seasonal and Cyclical Variation.

4. (A) Write the following : **14**

(I) What is vital statistics ? State their merits and demerits.

(II) Describe various types of birth rates.

OR

(I) Explain Gross and Net reproduction rates. Interprete the value of net reproduction rate.

(II) Write a note on life table.

(B) Answer the following questions in **one** or **two** lines : (Any **3**) **3**

(1) Define general fertility rate.

(2) Define age specific death rate.

(3) State the interpretation of GRR=0.7.

(4) What is Ix in standard life table ?

(5) Define $e°_x$.

Seat No. : _____

AC-106

April-2019

B.Sc., Sem.-IV

CC-205 : Statistics
(Statistical Test Official Statistics & Sampling)
(Old Course)

Time : 2:30 Hours] **[Max. Marks : 70**

1. (A) Write the following : **14**

(i) Define the following terms :

(a) Simple and composite hypothesis.

(b) Type I and Type II error

(c) Level of significance

(ii) Explain the procedure to test the significance of difference between two means based on large sample test.

OR

(i) Explain the procedure to test the significance of difference between two proportions based on large sample test.

(ii) Explain Fisher's Z transformation in detail.

(B) Answer the following questions in **one** or **two** lines : (Any **4**) **4**

(i) What is a parameter ?

(ii) What is a standard error ?

(iii) Give an example of null hypothesis.

(iv) Give an example of alternate hypothesis.

(v) What is a statistic ?

(vi) Define level of significance.

2. (A) Write the following : **14**

(i) Derive the equation of plane of regression for three variables using Yules notation.

(ii) Drive $\sigma^2_{1.23} = \sigma^2_1 \frac{\Delta}{\Delta_{11}}$.

OR

(i) Derive $R^2_{1.23} = \frac{r^2_{12} + r^2_{12} - 2r_{12}r_{23}r_{31}}{1 - r^2_{23}}$

(ii) Derive $R_{12.3} = \frac{-\Delta_{12}}{\sqrt{\Delta_{11}\Delta_{22}}}$.

(B) Answer the following questions in **one** or **two** lines : (Any **4**) **4**

(i) What is a correlation ?

(ii) What is multiple regression ?

(iii) What is primary subscript ?

(iv) What is the range of correlation coefficient ?

(v) Give any one property of multiple correlation coefficient.

(vi) State range of multiple correlation coefficient.

3. (A) Write the following : **14**

(i) State the origin and functions of Indian Census Operation in detail.

(ii) Give the details of statistical organizations in Central Government of India.

OR

(i) Write the origin and functions of NSSO in detail.

(ii) Write the origin and functions of CSO in detail.

(B) Answer the following questions in **one** or **two** lines : (Any **3**) **3**

(i) What is the full form of CSO ?

(ii) What is the full form of ICMR ?

(iii) What is the role of Indian Statistical Institute ?

(iv) Who is the founder of Indian Statistical Institute ?

(v) State full form of NSSO.

4. (A) Write the following : **14**

(i) Write the principal steps of Sample survey in detail.

(ii) Define the following terms :

(a) Sample and sample size

(b) Population and parameter

(c) Standard error

OR

(i) What are non-sampling errors ? What are the factors arising from non-sampling error ?

(ii) What are the advantages and disadvantages of sampling ?

(B) Answer the following questions in **one** or **two** lines : (Any **3**) **3**

(i) What are non-respondents ?

(ii) Explain two methods for collecting data.

(iii) What is a sample ?

(iv) Define mixed sampling ?

(v) What is judgmental sampling ?
