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Reg. No.

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VI Semester B.Sc. Degree Examination, August/September - 2023

STATISTICS

Applied Statistics

(CBCS 2020 Freshers Scheme)

Time : 3 Hours

Maximum Marks : 70

Instructions to Candidates :

- i) Answer any Five questions from Section A and Five questions from Section B.
- ii) Scientific calculators are allowed.

SECTION - A



I. Answer any FIVE questions from the following.

(5×5=25)

1. What is Time series ? Explain its components.
2. Describe the method of measuring trend by fitting a straight line.
3. Define Index numbers. Explain the steps involved in the construction of Index numbers.
4. What are time reversal and factor reversal tests? Show that fisher's index numbers satisfies both these tests.
5. Explain the following terms.
  - i) CDR
  - ii) ASDR
  - iii) Standardised death rate (STDR)
  - iv) IMR
  - v) MMR
6. What is a life table? Mention its components.

[P.T.O.]



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7. Write a note on central statistics office [CSO] and its activities.
8. What is national income? Write the main features of the concept of national income.

**SECTION - B**

**II.** Answer any **FIVE** questions from the following.

(5×9=45)

9. a) Explain the method of measuring trend by moving average.  
b) Explain the method of measuring seasonal variation by ratio to moving averages.  
(4+5)
10. a) Prove that Marshall-Edgeworth and Fisher's price index numbers lies between laspeyre's and Paasche's index numbers.  
b) What is cost of living index numbers? Explain the methods of obtaining them.  
(6+3)
11. a) What are vital statistics? Explain their sources.  
b) Define and compare various measured of fertility.  
c) Define 'Reproduction Rates'

In what way do Total Fertility Rate (TFR), Gross Reproduction Rate (GRR) and Net Reproduction Rate (NRR) differ from one another as measures of reproduction rates?

(3+3+3)

12. a) Define central mortality rate and force of mortality.  
b) Show that with usual notations.

i) 
$$m_x = \frac{2q_x}{2 - q_x}$$

ii) 
$$e_x^{\circ} = \frac{T_x}{l_x}$$

- c) Mention the uses of life table.

(2+5+2)



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13. a) What are clinical trials? State the four phases of a clinical trial.  
b) Write a note on cross sectional studies.

(5+4)

14. a) What is meant by odds ratio? Interpret it and write 95% confidence interval for odds ratio.  
b) Describe the construction of Receiver Operating Characteristic (ROC) curve.  
c) Define Body Mass Index

(4+3+2)

15. a) Explain briefly NSSO and its activities.  
b) Define Gross National Product (GNP), Gross Domestic Product (GDP), per capita income. Net National Product (NNP), Net Domestic Product (NDP).

(4+5)

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