SG – 295

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Sixth Semester B.Sc. Examination, September/October 2021
(CBCS) (F+R) (2019 – 20 and Onwards)
STATISTICS – VII
Applied Statistics

Time : 3 Hours Max. Marks : 70

Instructions : *i) Answer **any five** questions from Section **A** and **five** questions from Section **B**.*
*ii) Scientific calculators are **permitted**.*

SECTION – A **(25 Marks)**

I. Answer **any five** questions. **(5×5=25)**

1) a) What is meant by a time series ?
   b) Explain the irregular variation.

2) Explain the method of finding trend by fitting a straight line.

3) Define Index numbers. Write the expression for
   i) Laspeyre's Price index number.
   ii) Paasche's Price index number.
   iii) Dorbish-Bowley index number.
   iv) Marshall-Edgeworth index number.

4) a) What are time reversal and factor reversal tests of index numbers ?
   b) Why is Fisher's index number known as ideal index number ?

5) What do you mean by Vital Statistics ? Explain the uses and sources of it.

6) Define a life table. Explain the application and limitation of it.

7) Explain briefly the statistical system in pre-independence era in India.

8) Write a note on NSSO.

SECTION – B **(45 Marks)**

II. Answer **any five** questions : **(5×9=45)**

9) a) What do you mean by trend ? Describe the method of exponential trend by the method of least squares.
   b) What do you understand by seasonal variation ? What are the methods used to determine them ? **(4+5)**

P.T.O.

10) a) Explain the problem of the construction of index numbers with special reference to
   i) Selection of base period.
   ii) Price quotations.
   iii) Selection of appropriate weights.

   b) What is consumer price index number ? What are its uses ? **(4+5)**

11) a) Define :
   i) CDR (Crude Death Rate)
   ii) ASDR (Age Specific Death Rate)
   iii) IMR (Infant Mortality Rate)
   iv) MMR (Maternal Mortality Rate)

   b) Define :
   i) CBR (Crude Birth Rate)
   ii) GFR (General Fertility Rate)
   iii) ASFR (Age Specific Fertility Rate)
   iv) TFR (Total Fertility Rate)
   v) GRR (Gross Reproduction Rate). **(4+5)**

12) a) Describe the various components of a life table with usual notations, Prove that $m_x = \frac{Zq_x}{Z - q_x}$.

   b) What is expectation of life ? Distinguish between 'Curate Expectation' and 'Complete Expectation' of life.

   c) Define force of mortality. **(4+3+2)**

13) a) What are clinical trails ? State its phases.

   b) Distinguish between prospective and retrospective studies. **(5+4)**

14) a) What is meant by odds ratio ? Interpret it and write 95% CI for odds ratio.

   b) What is receiver operating characteristics curve ? State its uses.

   c) Define body mass index. **(4+3+2)**

15) a) What are the functions of CSO ?

   b) What is National Income ? Mention the methods of estimating national income. **(4+5)**
