B.Sc. (Part-II) (Semester-III) (CBCS (NEP2020) Examination, Oct. / Nov. 2023
STATISTICS (Paper–VI)
Statistical Methods – I
Sub. Code: 91570

Day and Date: Wednesday, 29/11/2023
Time : 10:30 a.m. to 12:30 p.m. **Total Marks: 40**

Instructions : ***i) All questions are compulsory .***
ii) Figures to the right indicate full marks.

Q. 1. Choose the most correct alternative: **(08)**

1) Let |R| is the determinant of simple correlation coefficients then three regression plans coincide if…
A) $|R| = 0$ B) $|R| = 1$ C) $|R| > 0$ D) $|R| > 1$

2) The residual $X_{1.23}$ is called as residual of order …
A) 0 B) 1 C) 2 D) 3

3) The range in which partial correlation coefficient lies is ….
A) – 1 to 1 B) 0 to 1 C) $-\infty$ to ∞ D) 0 to ∞

4) If $R_{1.23} = 0$ then $r_{12} = r_{13}$= ...
A) 0 B) 1 C) – 1 D) 0.5

5) The Index no. for the base period is always taken as…..
A) 200 B) 50 C) 1 D) 100

6) If Laspeyre's price index number is 121 and Paasche's price index number is 144 then Fishers price index number is …
A) 265 B) 100 C) 132 D) 180

7) The term 'domestic' territory in national income is an associated with …
A) Economic territory B) Residents
C) Citizens D) Geographical territory

8) Nominal GDP is ….
A) GDP at current prices B) GDP at constant prices
C) Real GDP D) none of these

Q.2. Attempt any *Two* of the following **(16)**

1) Define partial correlation coefficient ($r_{12.3}$). Obtain an expression for partial correlation coefficient ($r_{12.3}$) in terms of simple correlation coefficient.

2) Define residual of variable X_1 with respect to X_2 and X_3 (i.e. $X_{1.23}$) and obtain its mean and variance.

3) Show that Laspeyre's index number does not satisfy the time reversal and factor reversal test but Fisher's index number satisfies the both test.

Q. 3. Attempt *any four* from the following: **(16)**

1) Show that multiple correlation coefficient lies between 0 and 1

2) Explain simple average of relative method using A.M. and G.M. to construct Index number

3) Explain why Fisher index number is called as ideal index number

4) Explain Gross National Product(GNP) and Net National Product (NNP)

5) Explain Personal income and Personal disposable income

6) With usual notation show that $b_{12.3} \times b_{21.3} = r_{12.3}^2$

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