B.Sc. (Part-II) (Semester-IV) (CBCS (NEP2020)) Examination, March/April 2024
Balasaheb Desai College, Patan
STATISTICS
Sub. Code: 94263
Statistical Methods–II (Paper – VIII)

Day and Date: Saturday, 13/04/2024　　　　　　　　**Total Marks: 40**
Time : 02:30 p.m. to 04:30 p.m.　　　　　　　　　　**Period: 2 Hours**
　　　　　　　　　　　　　　　　　　　　　　　　　　Total Pages: 02

Instructions :　i)　All questions are compulsory .

　　　　　　　　ii)　Figures to the right indicate full marks.

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

1)　The long-term regular movements in a time series are called ……….

　　a) seasonal variations　　　　　　　　b) cyclical variations

　　c) secular trend　　　　　　　　　　　d) irregular variations

2)　With usual notation, Multiplicative model for time series is Y=...

　　a) T + S + C + I　　　　　　　　　　b) T - S - C – I

　　c) T x S x C x I　　　　　　　　　　d) none of these

3)　The statistical quality control charts were devised by

　　a) R. A. Fisher　　　b) W. S. Gosset　　　c). Karl Pearson　　　d) W. A. Shewhart

4)　Control chart consists of …….

　　a) three control lines　　　　　　　　b) upper and lower control limits only

　　c) the level of the process　　　　　　d) all of these

5)　Which of the following error is more serious?

　　a) Type I　　　　　b) Type II　　　　　c) Type III　　　　　d) none of these

6)　If β is the type II error then $1 - \beta$ is called as….

　　a) Power function　　b) Power of the test　　c) OC function　　　d) none of these

7)　A Large sample test for testing equality of two population means is based on … distribution

　　a) Chi-square　　　　b) F　　　　　　c) Gamma　　　　d) Normal

8)　The degrees of freedom of Chi-square test statistics for testing independence of attributes in 2×2 Contingency table is …

　　a) 3　　　　　　　b) 1　　　　　　c) 4　　　　　　d) 2

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

1 Define 'Time Series' and explain the components of time series

2 Define

   i) Null hypothesis

   ii) Alternative hypothesis

   iii) Critical Region

   iv) Level of significance

3 Describe large sample test for testing Population mean

   i.e. $H_0 : \mu = \mu_0$

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

1 State the uses of time series analysis

2 Explain Process and Product control

3 Explain the construction of c-chart

4 Explain paired t-test for testing difference of means

5 Explain Defect and defectives

6 Describe large sample test for testing population correlation coefficient

   i.e. $H_0 : \rho = \rho_0$ Vs $H_1 : \rho \neq \rho_0$

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