



DCST603

Reg. No.

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VI Semester B.Sc. Degree Examination, July/August-2024

STATISTICS

Applied Statistics

(NEP Scheme 2020)

Paper : VIII



Time : 2½ Hours

Maximum Marks : 60

Instructions to Candidates:

1. Answer any Five sub-divisions from Section A and Five questions from Section B.
2. Scientific Calculators are allowed.

SECTION - A

I. Answer any Five sub-divisions from the following.

(5×3=15)

1. a) Mention the areas of application of OR.
b) State the characteristics of a Linear Programming Problem (LPP).
c) Explain graphical method of obtaining a solution to an LPP.
d) What are the characteristics of 'Canonical form' of a LPP?
e) Describe a transportation problem.
f) Explain the following terms with reference to a game problem.
i) Strategy
ii) Pay off.
iii) Saddle point
g) Define index numbers. Distinguish between weighted and unweighted index numbers. List them.
h) What in time series? Mention important uses of time series.
i) What are vital statistics? Explain their sources.

SECTION - B

II. Answer any Five questions from the following.

(5×9=45)

2. a) Describe various phases of OR.
b) Explain simplex method of solving a LPP.

(4+5)

[P.T.O.]



3. a) State and prove the necessary and sufficient condition for the existence of a feasible solution to a $(M \times n)$ transportation problem.
b) Explain Hungarian algorithm of solving an Assignment problem. (4+5)
4. a) Explain maximin and minimax principle of solving a game problem.
b) State the principle of dominance.
c) Explain the graphical method of solving a $2 \times n$ game. (3+2+4)
5. a) Explain the steps involved in the construction of index numbers.
b) Show that Marshal Edgeworth index number satisfies time reversal test.
c) What are cost of living index numbers? Explain. (4+3+2)
6. a) Describe the components of a time series.
b) Discuss the method of measuring trend by fitting a parabola. (4+5)
7. a) Explain the terms:
i) Infant Mortality Rate (IMR)
ii) Standardised Death Rate (STDR)
iii) Maternal Mortality Rate (MMR)
b) Define
i) Crude Birth Rate (CBR)
ii) Age Specific Fertility Rate (ASFR)
iii) Female Age Specific Fertility Rate
iv) Total Fertility Rate (TFR)
c) Explain gross and net reproduction rates. (3+4+2)
8. a) Define central mortality rate and force of mortality.
b) Explain stationary population and stable population.
c) What is life table? Mention its components. (2+2+5)
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