2017

STATISTICS

[Honours]

(Theory)

PAPER – IV

Full Marks : 45

Time : 2 hours

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

[NEW SYLLABUS]

GROUP – A

[*Marks* : 20]

1. Answer any *one* question :   10 × 1

   (*a*) (*i*) Describe 'if' statement with example used in C.

(*ii*) Write a program in C to find the mean and standard deviation of a set of n real numbers.   4 + 6

(*b*) (*i*) Describe RAM and ROM.

(*ii*) Find the sum of the binary numbers 10100010 and 11001101.

(*iii*) Compare 'do-while' and 'while' loops with flowchart.   3 + 3 + 4

2. Answer any *two* questions :   5 × 2

(*a*) Explain the process to draw a bar diagram using MS-Excel.

(*b*) Explain the steps to find the correlation coefficient of a bi-variate sample using statistical.

(*c*) Convert the decimal number 63585 into binary and hexadecimal numbers.

GROUP – B

[*Marks* : 25]

3. Answer any *three* questions :   5 × 3

(*a*) What is crude birth rate ? To compare fertility levels of two countries how can you modify this measure ?

(*b*) For a life-table show that the following relation holds approximately :

$$q_x = \frac{2m_x}{2 + m_x},$$

where the symbols bear the usual meanings.

(*c*) Distinguish between a stable population and a stationary population.

(*d*) Why is age-specific fertility rate (ASFR) a better measure of fertility than general fertility rate (GER) ?

(*e*) Explain the concept of standardised death rate and discuss its necessity.

4. Answer any *one* question : .   10 × 1

(*a*) (*i*) Define gross reproduction rate (GRR) and net reproduction rate (NRR). Show

that NRR $\leq$ GRR. Also explain the case of equality.

    (*ii*) Derive, under suitable set of assumptions, the equation of the logistic curve.   6 + 4

(*b*) (*i*) What is the purpose of construction of a life-table ? Explain the significance of the columns contains l_x, d_x, q_x and L_x.

    (*ii*) Explain the GP method for population projection.   6 + 4

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