5 SEM TDC DSE STS (CBCS) 4 (H)

2 0 2 3

(November)

STATISTICS

(Discipline Specific Elective)

(For Honours)

Paper : DSE–4

(Demography and Vital Statistics)

Full Marks : 50

Pass Marks : 20

Time : 2 hours

The figures in the margin indicate full marks
for the questions

1. Choose the correct answer from the given
   alternatives in each :   1×5=5

   (a) According to the theory of Malthus,
       human population grows in

       (i) geometric progression

       (ii) arithmetic progression

       (iii) Both (i) and (ii)

       (iv) None of the above

(b) In the usual notation, Infant Mortality Rate (IMR) is given by

   (i) $\dfrac{D_0}{B} \times 1000$

   (ii) $\dfrac{D_0}{B} \times 100$

   (iii) $\dfrac{D_0}{P} \times 1000$

   (iv) $\dfrac{D_0}{P} \times 100$

(c) e_x^0, the complete expectation of life, is nothing but

   (i) $\dfrac{T_x}{l_x}$

   (ii) $\dfrac{l_x}{T_x}$

   (iii) $T_x + l_x$

   (iv) $\dfrac{T_x}{T_x + l_x}$

(d) Age-specific mortality rates fail to reveal

   (i) mortality conditions

   (ii) age distribution of persons

   (iii) sex ratio

   (iv) All of the above

(e) A standard number of births 10000 originating a life-table is known as

   (i) a cohort

   (ii) initial population

   (iii) radix

   (iv) All of the above

2. Answer the following questions in brief :

                        $2 \times 5 = 10$

(a) How does a stable population differ from stationary population?

(b) Why is IMR called the most sensitive index of mortality?

(c) Define maternal mortality rate.

(d) What is an abridged life table?

(e) What is meant by NRR = GRR?

3. (a) What are limitations of registration of vital statistics in India?   7

Or

(b) Write an explanatory note on Chandrasekaran–Deming approach to check the completeness of registration data.   7

4. (a) Discuss any three measures of mortality rate. 6

(b) "CDRs are not suitable for comparing the mortality situations of two places." Justify this with examples. Discuss the method of construction of death rate which is generally adopted for the comparison of mortality situations of two different places. 3+3=6

5. (a) What is revealed by a life table? On what assumptions or factors is the construction of life table based? 2+4=6

Or

(b) Discuss the term 'central mortality rate' and give the formula for its calculations. 2+4=6

6. (a) Define fertility of a population. Discuss various coefficients used for measuring fertility. 2+8=10

Or

(b) (i) What are crude rate of natural increase and Pearle's vital index of population growth? 2+2=4

(ii) Define gross and net reproduction rates. Show that NRR cannot exceed GRR. 2+2+2=6

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