(b) Describe the role and responsibilities of NSSO and CSO. Name its main divisions.

(c) Define the rate and ratio of vital events. What is the significance of the sex ratio? Also, explain why C.D.R. is not suitable for comparing the mortality rates of two different places. (5,5,5)

[This question paper contains 8 printed pages.]

Your Roll No...............

Sr. No. of Question Paper : 4125   **H**

Unique Paper Code : 2372011202

Name of the Paper : Applied Statistics

Name of the Course : **B.Sc. (H) Statistics (GE)**

Semester : II (NEP)

Duration : 3 Hours   Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt **six** questions in all.

3. Q. No. **1** is compulsory.

4. Attempt **five** more questions selecting at least **two** questions from each section.

5. Use of a non-programmable scientific calculator is allowed.

1. (a) (i) In most of the situations index numbers are the _____ averages.

   (ii) Laspeyre's price index uses the _____ quantities as weights.

   (iii) The Drobish-Bowley price index is the _____ Laspeyre's and Paasche's.

   (iv) The condition for the circular test to hold good with usual notations is _____ .

   (v) Simple Arithmetic mean of price relatives does not satisfy _____ tests.

   (vi) General fertility rate is based on women of _____ .

   (vii) If NRR = 1 then the female population will be exactly _____ .

6. (a) Define the cost of living index number. How are they useful for calculating the real wages of the worker?

   (b) Computer Fisher's 'ideal' index number from the following data. Also, examine whether it satisfies the time reversal test.

Commodities / Year		2000	2009
Rice	Price	Rs. 4	Rs. 10
	Quantity	50 Kgs.	40 Kgs.
Wheat	Price	Rs. 3	Rs. 8
	Quantity	10 Kgs.	8 Kgs.
Gram	Price	Rs. 2	Rs. 4
	Quantity	5 Kgs.	4 Kgs.

   (8,7)

7. (a) What is the background and objectives of Conference of Central and State Statistical Organizations (COCSSO)?

P.T.O.

SECTION B

5. (a) Calculate the General Fertility Rate, Total Fertility Rate, and Gross Reproduction Rate from the following data, assuming that for every 100 girls, 110 boys are born.

Age of Women:	15-19	20-24	25-29	30-34	35-39	40-44	45-49
No. of Women:	2,11,519	197,612	151,700	135,162	118,108	103,211	80,753
Age-S.F.R.(per 1000)	96.0	179.0	158.9	139.2	97.6	40.8	14.8

(b) Describe a life table along with its assumptions and the steps required for its construction.

(c) What is meant by curate and complete expection of life? Show that :

$$e_x^0 = \frac{T_x}{l_x}$$

(5,5,5)

(viii) The expectation of life at any age can be obtained from a ———— .

(ix) ———— and ———— are two methods of collecting census.

(b) Define briefly the Total Fertility Rate.

(c) Explain briefly Family budget method to find the cost of living index.   (9×1,2×3)

SECTION A

2. (a) Write the short notes on :

(i) Infant Mortality Rate

(ii) Age Specific Death Rate

(iii) Gross Reproduction Rate

(iv) Net Reproduction Rate

(b) Given the following data :

Age Group	Age distribution per 1000 of the population			Percentage unemployment		
	District A	District B	District C	District A	District B	District C
15-29	300	200	240	3.5	3	4
30-44	320	350	360	9	8	7.5
45-59	325	300	290	11.5	15	12.5
60 & above	55	150	110	22	25	18

Calculate the unemployment rate

(i) for the country as whole,

(ii) for district A, B and C separately.

(8,7)

3. (a) What is Fisher's 'ideal' formula for preparing index numbers? Does it satisfy the time reversal and factor reversal test, justify your answer with the help of suitable examples.

(b) A textile worker in the city of Bombay earns rupees 3500 per month. The cost of living index for a particular month is given as 136. Use the following data to find out the amount he spends on house rent and clothing:

Group	Expenditure (Rs.)	Group index
Food	1400	180
Clothing	?	150
House rent	?	100
Fuel and lighting	560	110
Miscellaneous	630	80

(8,7)

4. (a) Discuss briefly the present statistical system in India.

(b) Discuss the different types of errors that affect a price index number. (7½,7½)

P.T.O.