Exam.Code:0005
Sub. Code: 0446

2012
B.A./B.Sc. (General) Fifth Semester
Statistics
Paper-301: Demography and Economic Statistics

Time allowed: 3 Hours

Max. Marks: 65

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit. Use of electronic calculator with four basic mathematical operations and upto one memory is allowed. Various symbols used have their usual meaning.

x-x-x

Question 1. Answer the following:-
a) Define Crude death rate. (2)
b) Define total fertility rate. (2)
c) What do you understand by index number? (2)
d) Comment upon the selection of appropriate weights in index number. (2)
e) Write the uses of cost of living index number. (3)
f) Write the mathematical model of time series. (2)

Unit-1

Question 2. a) Define direct and indirect methods of standardized death rates. (5)
b) Calculate the crude and standardized death rates for the local population from the following data and compare them with crude death rate of the standard population. (8)

Age-group	Standard population	Deaths	Local Population	Deaths
0-10	600	18	400	16
10-20	1000	5	1500	6
20-60	3000	24	2400	24
60-100	400	20	700	21

Question 3. a) Explain the construction of a life table with its assumptions and uses. (6)
b) A part of a life table is given below with most of the entries missing. On the basis of the available figures, supply the missing once and complete the table. (7)

x	l_x	d_x	$1000\,q_x$	L_x	T_x	e_x^0
25	78,046	–	–	–	–	3960
26	77,614	440	–	–	–	–
27	–	–	–	–	–	–
28	76723	–	6.06	–	–	–
29	–	–	–	–	–	–
30	–	–	–	75532	2705310	–

Question 4. a) Explain the method of semi averages with its merits and demerits. (6)
b) Fit a second degree parabolic trend to the data given below and estimate the value for 2008 and comment on it. (7)

Year	2001	2002	2003	2004	2005
Sales ('000 Rs.)	8	10	14	11	8

P.T.O.

Question 5. a) Write a note on:

(i)   Ratio to trend method

(ii) Ratio to moving average method. (8)

b) Compute the seasonal indices by the 'Link Relative' method for the adjoining data relating to the average quarterly prices (Rs. Per kg.) of a commodity for four years: (5)

Year Quarter	1997	1998	1999	2000
I	30	35	31	34
II	28	26	29	36
III	22	22	25	26
IV	36	36	35	32

Unit-II

Question 6. Explain the criteria of a good index number. (13)

Question 7. a) Show that Marshall-Edgeworth index number lies between Laspeyre's and Paasche's index numbers. (5)

b) From the following data calculate price index numbers for 2004 with 1994 as base by (i) Laspeyre's (ii) Paasche's (iii) Marshall-Edgeworth and (iv) Fisher's formulae: (8)

Commodities	1994		2004	
	Price	Quantity	Price	Quantity
A	15	5	20	4
B	20	8	30	6
C	50	10	60	8
D	40	15	50	15
E	30	20	30	30

Question 8.

a) Write a note on Chain base index number. (5)

b) Explain the cost of living index number. (8)

Question 9.

a) Explain the static law of demand and supply. (8)

b) Write a note on price elasticity of demand. (5)

x-x-x