1127
B.A./B.Sc. (General) Fifth Semester
Statistics
Paper – 301: Demography and Economic Statistics

Time allowed: 3 Hours

Max. Marks: 65

NOTE: *Attempt* <u>*five*</u> *questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.*

x-x-x

Q. No.1: A) Answer the following questions:

(2*5=10)

a) What are the sources of demographic data?
b) Define Pareto Distribution?
c) What are the methods of obtaining vital statistics?
d) What are the methods for the measurement of seasonal variations?
e) What are the formulae for family budget method and unweighted price index number?

B) Answer the following questions:

(1.5*2=3)

f) Give the name of different methods for measuring trend.
g) Explain the notations commonly used in index number formulae

SECTION-A

Q. No. 2: (a) Define Gross reproduction rate and net reproduction rate and how they are calculated? (5)

(b) From the figures given below compute the General Fertility Rate and the Total Fertility Rate:

Age groups	15-20	20-25	25-30	30-35	35-40	40-45	45-50
No. of Women	100	120	110	105	100	80	70
Specific fertility rate (per 1,000)	15	100	120	140	80	50	10

(8)

Q. No. 3: (a) Differentiate between Crude Death Rate and Standardized Death Rate. (6)

(b) Calculate Specific Fertility Rate for the following data:

Age groups	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Female population ('000)	32	30	28	26	24	22	18
Births	800	3420	4200	2860	1920	660	72

(7)

Q. No. 4: (a) Fit a straight line trend by the method of least squares to the following data and also compute trend values.

Year:	1993	1994	1995	1996	1997	1998	1999
Production (in 000 units):	80	90	92	83	94	99	92

(8)

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(b) Explain briefly the components of time series. **(5)**

Q. No. 5: (a) Write a note on:

i. Moving Average Method

ii. Additive Model and Multiplicative Model **(8)**

(b) Fit a trend line by the method of semi-average for the following data:

Year:	1993	1994	1995	1996	1997	1998	1999
Profit (000' Rs.)	20	22	27	26	30	29	40

Also estimate the profit for the year 2000. **(5)**

SECTION-B

Q. No. 6. Write short note on:

i. Time Reversal Test and Factor Reversal Test

ii. Methods of Constructing Weighted Price Index Numbers **(13)**

Q. No. 7: Calculate Laspeyre's, Paasche's, Fisher's, Dorbish –Bowley's and Marshall-Edgeworth's price index numbers for the following data:

Items	1980		1985	
	Price (Rs.)	Expenditure	Price (Rs.)	Expenditure
A	5	50	6	72
B	7	84	10	80
C	10	80	12	96
D	4	20	5	30
E	8	56	8	64

Which of them satisfies time reversal and factor reversal tests? **(13)**

Q. No. 8: (a) Explain the following:

i. Static law of demand and supply

ii. Price elasticity of demand **(8)**

(b) Describe log normal distribution. What are its properties? **(5)**

Q. NO. 9: (a) Explain chain base methods of constructing index number and give its relative merits and demerits. **(8)**

(b) Write a short note on Cost of living index number. **(5)**

x-x-x