

Total No. of Questions : 6]

SEAT No. :

PB1306

**[6224]-311
S.Y.B.Com.**

[Total No. of Pages : 4

**236-F : BUSINESS STATISTICS - I
(2019 Pattern) (Semester - III)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Q.No 1 and Q.No 6 are compulsory.*
- 2) *Solve any 3 questions from Q.No 2 to Q.No 5.*
- 3) *Use of statistical table and calculator is allowed.*
- 4) *Figures to the right indicates full marks.*
- 5) *Symbols have their usual meanings.*

Q1) A) Choose the correct alternative in each of the following (any five).

[5×1=5]

- a) Which of the following is an example of attribute characteristics?
 - i) Height
 - ii) Weight
 - iii) Speed
 - iv) Blood group
- b) The range in which Partial Correlation Coefficient lies is _____.
 - i) -1 to 1
 - ii) 0 to 1
 - iii) 0 to ∞
 - iv) $-\infty$ to ∞
- c) In vital statistics, if N.R.R. Per Women is 0.8840 then population _____.
 - i) Goes on increasing
 - ii) Is decreasing
 - iii) Is Constant
 - iv) Whether increasing or decreasing cannot say
- d) Life tables are prepared for _____.
 - i) Animals
 - ii) Humans
 - iii) Both (i) and (ii)
 - iv) None of the above
- e) With the 3 attributes A, B and C the number of second order classes is _____.
 - i) 6
 - ii) 9
 - iii) 12
 - iv) 3

P.T.O.

Q4) Attempt each of the following:

[3×5=15]

- a) Explain the methods of collecting vital statistics. Define mortality rates, fertility rates.
- b) Compute T.F.R. for the following data:

Age-group	15-20	20-25	25-30	30-35	35-40	40-45	45-50
No. of Women	1000	1000	1000	1000	1000	1000	1000
No. of births	15	137	116	86	62	19	10

- c) From the following data compute G.R.R. and N.R.R.

Age-group	16-20	21-25	26-30	31-35	36-40	41-45	46-50
Fertility rate Per1000 Women	40	73	60	37.6	23	8.4	1
Percent survival rate	85	80	70	65	60	50	45

Q5) Attempt each of the following:

[3×5=15]

- a) Define life table, explain the functions of l_x , dx L_x and their interpretation.
- b) Fill in the blanks of the following life table which are shown with question mark:

Age (x)	l_x	dx	q_x	P_x	L_x	T_x
4	880	?	?	?	?	?
5	648	-	-	-	-	11124

- c) Given the following table for l_x , the number of rabbits living at a age X.

X	0	1	2	3	4	5	6
l_x	100	90	80	75	60	30	0

X, Y, and Z are the three rabbits of age 1, 2 and 3 years respectively. Find the probability that at least one of them will be alive for one Year or more.

Q6) Write a short notes on the following.(any 3)

[3×5=15]

- a) Define types of classes, order of a class, dot operator to find relation between class. Frequency (Upto order three).
- b) Define residuals, properties of residuals.
- c) Explain direct method and indirect method of obtaining STDR.
- d) Explain the functions of P_x , q_x , and e_x in life table and their interpretation.
- e) Define multiple and partial correlation. State the relation between multiple correlation coefficient in terms of partial and total correlation coefficients.

