

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BA DEGREE EXAMINATION MAY 2019
(Fourth Semester)

Branch - **SOCIOLOGY**

SOCIAL STATISTICS - II WITH COMPUTER APPLICATIONS

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 x 2 = 20)

- 1 Define Statistics.
- 2 When the data is said to be consistent in the case of association of attributes?
- 3 Define vital statistics.
- 4 The number of live births and deaths of children under one year of age, in a city, in the year 1983 are reported as given below: No. of births = 4721; No. of deaths = 101. Calculate infant mortality rate.
- 5 What are the components of timeseries analysis?
- 6 Define forecasting.
- 7 One card is drawn from a standard pack of 52. What is the probability that it is either a king or queen?
- 8 If the probability of a defective bolt is 0.1. Find the standard deviation of defective bolts in a total of 900.
- 9 Give the formula to calculate regression lines using MS Excel.
- 10 Write the formula to calculate mean of Poisson distribution using MS Excel.

SECTION - B (25 Marks!)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

- 11 a Consider the following data for two attributes A and B and test its consistency.
(A) = 80, (B) = 280, (AB) = 50, N = 400.
OR
b Discuss on kinds of association of attributes.
- 12 a Write short notes on methods of obtaining vital statistics.
OR
b Briefly explain the uses of life table.
- 13 a Discuss additive and multiplicate model of time series analysis.
OR
b Construct 5-yearly moving averages of the number of students studying in a college show below.

Year:	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
No. of students:	332	317	357	392	402	405	410	427	405	438
- 14 a The odds against A speaking the truth are 4:6 while the odds in favour of B speaking the truth are 7:3. What is the probability that A and B contradict each other in stating the same fact?

14 Cont...

b A sample of 100 dry battery cells tested to find the length of life produced the following results:

$$x \sim 12 \text{ hours, } a = 3 \text{ hours}$$

Assuming the data to be normally distributed, what percentage of battery cells are expected to have life:

(a) More than 15 hours (b) Between 10 and 14 hours?

15 a Explain the methods of fitting straight line trends using MS Excel.

OR

b Write the computation procedure to find correlation between two variables using MS Excel.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

16 Eighty - Eight residents of an Indian city, who were interviewed during a sample survey, are classified below according to that smoking and tea drinking habits. Calculate Yule's coefficient of association and comment on its value.

	Smokers	Non-Smokers
Tea drinkers	40	32
Non-tea drinkers	3	12

Fill in the blanks in the portion of life table given below:

Age	l_x	d_x	q_x	p_x	L_x	T_x	e_x
20	693435					35081126	
21	690673						1

18 Fit a straight line trend for the following series?

Year :	2005	2006	2007	2008	2009	2010	2011
Production of steel (in tones) :	60	72	80	85	90	95	100

19 Fit a Poisson distribution to the data given below

No. of accidents	0	1	2	3	4
No. of days	19	18	8	4	1

20 Explain the method of fitting normal distribution using MS Excel.

Z-Z-Z

END