

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BA DEGREE EXAMINATION MAY 2022
(Fourth Semester)**

Branch – **SOCIOLOGY**

SOCIAL STATISTICS – II WITH COMPUTER APPLICATIONS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 x 1 = 10)

1. If the attributes are completely associated with each other than the coefficient will be
(i) -1 (ii) -1 (iv) 0 (iv) none of the above
2. When the frequencies of an observed attribute is equal to expectation, the two attributes are said to be
(i) Independent (ii) dependent (iii) equal (iv) none of the above
3. Probability takes the limit
(i) $-\infty$ to ∞ (ii) -2 to $+2$ (iii) -1 to $+1$ (iv) 0 to 1
4. Mean, median and mode coincides for _____ distribution
(i) Binomial (ii) Poisson (iii) Normal (iv) Bernoulli
5. Total fertility rate refers to
(i) Number of births per 1000 woman (ii) Number of woman between 15-49 years
(iii) Number of children per woman (iv) approximate family size
6. Which of the following is not a measure of mortality?
(i) Crude death rate (ii) specific death rate
(iii) infant mortality rate (iv) crude birth rate
7. A timeseries consists of
(i) Short term variations (ii) long term variations
(iii) irregular variations (iv) all the above
8. The method of moving average is used to find
(i) Secular trend (ii) seasonal variation
(iii) cyclic variation (iv) irregular variation
9. _____ function in MS Excel worksheet represents the total number of entries in the cells
(i) Count (ii) Total (iii) sum (iv) average
10. The function used to get a binomial distribution probability for a given number of success
(i) BINOM.DIST (ii) BINOM.DIST.RANGE
(iii) BINOM (iv) BI.DIST

SECTION - B (35 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 7 = 35)

11. a) From the following ultimate class frequencies, find the frequencies of the positive and negative classes and the total number of observations.
(AB) = 50 (Ab) = 25 (aB) = 40 (ab) = 20

(OR)

- b) A small group of individuals was examined for the presence or absence of certain infirmities. Two chief defects were noted namely blindness A and deaf-mutism B. The following results were obtained : Blind and deaf mutes = 10; Not blind and not deaf-mutes = 5 Blind and not deaf-mutes = 30; not blind and deaf mutes = 5. Find the extent and the nature to which blindness A and deaf mutism B are associated.

Cont...

12. a) Ten coins are tossed simultaneously. Find the probability of getting
i) atleast seven heads ii) exactly seven heads iii) atleast seven heads.
(OR)
b) List the properties of Poisson and Normal distribution.
13. a) Explain the components of life table.
(OR)
b) Explain the sources and uses of vital statistics.
14. a) Explain the components of time series.
(OR)
b) Using three year moving averages determine the trend and short term fluctuations.

Year	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Production (000 tonnes)	21	22	23	25	24	22	25	26	27	26

15. a) Explain the procedure to fit the straight line trend in MS excel.
(OR)
b) Elaborate the method of computation of binomial distribution using MS excel.

SECTION - C (30 Marks)

Answer any **THREE** Questions

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

16. In a survey covering 1000 persons it was found that 520 were males, 400 were married and 580 were employed. There were 340 married males. The number of married employed was 280. It is required to find if some males were employed and state how many at least as such.
17. Students of a class were given an aptitude test. Their marks were found to be normally distributed with mean 60 and standard deviation 5. What percent of student scored i) more than 60 marks? ii) less than 56 marks iii) between 45 and 65 marks.
18. Compute i) Gross fertility rate ii) Specific fertility rate iii) Total fertility rate and gross reproduction rate from the data given below:

Age group of child bearing females	No. of women (000)	Total births
15-19	16	250
20-24	16.4	2244
25-29	15.8	1894
30-34	15.2	1320
35-39	14.8	916
40-44	15	280
45-49	14.5	145

Assume the proportion of female birth is 46.2 percent.

19. Calculate the seasonal indices from the following data using the average method.

Year	I quarter	II quarter	III quarter	IV quarter
1974	72	68	80	70
1975	76	70	82	74
1976	74	66	84	80
1977	76	74	84	78
1978	78	74	86	82

20. Construct the procedure to determine trend using the moving average in MS Excel.

Z-Z-Z

END