

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BA DEGREE EXAMINATION DECEMBER 2024
(Fourth Semester)

Branch – SOCIOLOGY

SOCIAL STATISTICS – II WITH COMPUTER APPLICATIONS

Time: 3 Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. Yule's coefficient ranges between
(i) -1 and 1 (ii) 0 and 1 (iii) $-\infty$ and ∞ (iv) 0 and ∞
2. The variance of a binomial distribution is
(i) np (ii) np (1-p) (iii) n^2p (iv) $\sqrt{np(1-p)}$
3. Vital statistics primarily focus on the registration of
(i) Economic activities (ii) Births, deaths, and marriages
(iii) Educational achievements (iv) Environmental factors
4. In a time series, which component represents the long-term movement in data?
(i) Trend (ii) Seasonal (iii) Cyclical (iv) Irregular
5. Excel function used to calculate Poisson probability is
(i) POIS.PROB (ii) POISSON.DIST (iii) POISPROB (iv) POIS.DIST

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

6. A) State the conditions of consistency for two attributes A and B?
(OR)
b) In a series of houses actually invaded by smallpox, 70% of the inhabitants are attacked and 85% have been vaccinated. What is the lowest percentage of the vaccinated that must have been attacked?
7. a) If two dice are thrown, what is the probability that the sum is greater than 8.
(OR)
b) Define Binomial distribution and derive its mean and variance.
8. a) State the methods of obtaining vital statistics.
(OR)
b) Summarize the uses of life table.

Cont...

9. a) Narrate the applications of time series.

(OR)

- b) Obtain 4 yearly moving average for the following data

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Tonnage of goods carried	2204	2500	2360	2680	2424	2634	2904	3098	3172	2952	3248	3172

10. a) Mention the statistical functions available in MS Excel for data analysis.

(OR)

- b) Outline the procedure to fit straight line in MS excel.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11. a) Describe independence of attributes and point out the criterion of independence for attributes A and B.

(OR)

- b) Investigate the association between darkness of eye-colour in fathers and sons from the following data

Fathers with dark eyes and sons with dark eyes : 50

Fathers with dark eyes and sons with not dark eyes : 79

Fathers with not dark eyes and sons with dark eyes : 89

Fathers with not dark eyes and sons with not dark eyes : 782

Also tabulate for comparison the frequencies that would have been observed had there been no heredity.

12. a) A letter of the English alphabet is chosen at random. Calculate the probability that the letter so chosen.

i) is a vowel ii) precedes 'm' and is a vowel iii) follows 'm' and is a vowel

(OR)

- b) Outline the properties and applications of Poisson distribution.

13. a) Describe vital statistics and state its uses.

(OR)

- b) Explain

(i) Crude birth rate

(ii) General fertility rate

(iii) Total fertility rate

(iv) Specific fertility rate

14. a) Discuss the components of time series.

(OR)

- b) Elucidate the procedure for fitting of straight line by least squares method.

15. a) Summarize the procedure to compute binomial probability using MS excel.

(OR)

- b) Outline the procedure to calculate moving average in MS EXCEL.

Z-Z-Z

END