

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(First Semester)

Branch – INFORMATION TECHNOLOGY

STATISTICS FOR INFORMATION TECHNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

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

- 1 The arithmetic mean of 36,40,42,10,75 is
(i) 40.6 (ii) 40 (iii) 40.9 (iv) 39.8
- 2 If $\text{cov}(x, y) = 3$ and $v(x) = 4.5$ $v(y) = 5.5$ then the correlation co-efficient is _____.
(i) 0.5 (ii) 0.1212 (iii) 0.3 (iv) 0.603
- 3 Newton's Backward formula is used when the interpolating value lies:
(i) in the middle of the series
(ii) at the end of the series
(iii) in the beginning of the series
(iv) between equal intervals of the series
- 4 The components of a time series which is attached to short-term fluctuation is
(i) seasonal variation (ii) cyclic variation
(iii) irregular variation (iv) All of the above
- 5 In throwing of n dice the exhaustive number of cases is
(i) 6^n (ii) 6^{n-1} (iii) 6^{n+1} (iv) 6

SECTION - B (15 Marks)

Answer ALL Questions

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

- 6 (a) Mean of 100 items is found to be 30. If at the time of calculation two items are wrongly taken as 32 and 12 instead of 23 and 11. Find the correct mean.
(OR)
(b) Following is the distribution of marks in law obtained by 50 students:

Marks more than	: 0	10	20	30	40	50
No. of students	: 50	46	40	20	10	3

Calculate the median marks.
- 7 (a) Elucidate Karl Pearson's Coefficient of Skewness and Bowley's Coefficient of Skewness.
(OR)
(b) Define and differentiate the types of Kurtosis with pictorial representation.
- 8 (a) Mention any three uses of Interpolation and Extrapolation..
(OR)
(b) For the following data, find the missing value by Binomial Expansion Method

x:	1	2	3	4
y:	7	?	13	24

Cont...

9 (a) Define Secular trend

(OR)

(b) Define mathematical model for a time series.

10 (a) Write the step by step computing procedure of calculating AVERAGE, MEDIAN and MODE in Excel.

(OR)

(b) Write the step by step computing procedure of calculating all the measures of Dispersion in Excel.

SECTION -C (30 Marks)

Answer ALL questions

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

11 (a) Explain in detail the various types of one dimensional bar diagrams with examples.

(OR)

(b) Two brands of types are tested as follows;

Life('000Miles)	Brand X	Brand Y
20-25	8	6
25-30	15	20
30-35	12	32
35-40	18	30
40-45	13	12
45-50	9	0

State which model has longer life and which model has more uniformity

12 (a) Calculate coefficient of correlation from the following data.

X	12	9	8	10	11	13	7
Y	14	8	6	9	11	12	3

(OR)

(b) Price indices of cotton and wool are given below for the 12 months of a year. obtain the equations of lines of regression between the indices.

Price index

Of cotton (X): 78 77 85 88 87 82 81 77 76 83 97 93

Price index

Of wool (Y): 84 82 82 85 89 90 88 92 83 89 98 99

13 (a) Give a brief account of Lagrange's method for inverse Interpolation

(OR)

(b) Explain iterative method for inverse Interpolation.

14 (a) How do you fit trend line by the method of least squares?

(OR)

(b) Discuss in brief the moving average method for ascertaining the trend.

15 (a) Briefly outline the sketch of analysing time series data using Excel.

(OR)

(b) Briefly outline the procedure of Data Analysis using ANALYSIS TOOLPAK for using the functions of CORRELATION and REGRESSION with an illustration.