

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

**BCom DEGREE EXAMINATION DECEMBER 2019**  
(First Semester)

Branch - **COMMERCE ( COST AND MANAGEMENT ACCOUNTING)**

**BUSINESS MATHEMATICS & STATISTICS**

Time : Three Hours

Maximum : 75 Marks

**SECTION-A (20 Marks)**

Answer **ALL** questions

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

- 1 A certain sum amounts to Rs.4000 at end of 5 year at 12%p.a. interest. Find the sum.
- 2 Define square matrix.
- 3 Evaluate  $\int x^2 dx$ .
- 4 Write the formula of integration by parts.
- 5 What are the types of bar diagrams?
- 6 Define standard deviation.
- 7 Write the equations of a regression lines.
- 8 Define index number.
- 9 State the components of a time series.
- 10 Define probability.

**SECTION - B (25 Marks)**

Answer **ALL** Questions

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

- 11 The fourth and seventh terms of an A..P are 3and 36. Find the A.P and its fifteenth term.

OR

b Find the value of the determinant

$$\begin{vmatrix} 3 & -2 & 1 \\ 2 & 3 & -1 \\ 1 & 1 & 1 \end{vmatrix}$$

- 12 a Differentiate  $(ax+b)^n$ .

OR

Evaluate  $\int (x + \frac{1}{x})^2 dx$ .

- 13 a Find the quartile deviation for the following.  
391, 384, 591, 407, 672, 522, 777, 733, 1490, 2488.

OR

- b Calculate standard deviation from the following data.

Salary (Rs in 100's):	75	80	85	90	95	100
No. of persons :	3	7	18	12	6	4

- 14 a State the differences between correlation and regression.

OR

- b Calculate correlation co-efficient from the following data.

X :	45	70	65	30	90	40	50	75	85	60
Y :	30	90	70	40	95	40	60	80	80	50

**Cont...**

15 a State the properties of binomial distribution.

OR

b Using three yearly moving average and determine the trend.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Production	21	22	23	25	24	22	25	26	27	26

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

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

16 Solve by Cramer's rule

$$3x - y + 2z = 8$$

$$x + y + z = 2$$

$$2x + y - z = -1$$

/

17 Find the sum of n terms of the following series

$$7 + 77 + 777 + \dots$$

18 Calculate mean, median and mode for the following data.

Marks	0-10	10-20	20-30	30-40	40-50
No.of.students	3	5	9	3	2

19 Compute (i) Laspeyre's (ii) Paasche's and (iii) Fisher's Index number.

Item	Price		Quantity	
	Base Year	Current Year	Base year	Current Year
A	6	10	50	50
B	2	2	100	120
C	4	6	60	60
D	10	12	30	25

20 Explain normal distribution and state its properties.

**Z-Z-Z**

END