

PINNACLE INSTITUTE OF MANAGEMENT AND SCIENCE

Nagarabhavi Bangalore-72

III Semester B.Com. Pre-Finals Examination, JAN 2023

COMMERCE

Business Mathematics & Statistics

Time:2.30 Hours

Max.Marks:60

SECTION A

I Answer any 6 of the following each carries 2 marks.

(2X6=12)

1.

- a) Mention any four types of statistical averages.
- b) How do you calculate 'Mode' when it is ill-defined?
- c) $P.E=0.045$, $n=25$, find 'r'.
- d) Define Quadratic Equation.
- e) State two differences between Ratio and proportions.
- f) If $5:20::3:X$, find the value of X.
- g) Manish obtain 45 marks out of 60 marks. What percent of marks did he get?
- h) If $A=\begin{bmatrix} 2 & 3 \\ 1 & 4 \end{bmatrix}$ and $B=\begin{bmatrix} 3 & 5 \\ 1 & 2 \end{bmatrix}$, Find $A+B$.
- i) What is Annuity Due?

SECTION- B

II Answer any 3 of the following each carries 4 marks.

(3X4=12)

2. Find the compound interest on ₹ 800 @ 6% p.a. for 4 years.
3. Solve: $3(x+5)-25=9+2(x-7)$
4. If $A=\begin{bmatrix} 1 & -1 \\ -2 & 3 \end{bmatrix}$ and $\begin{bmatrix} 4 & 1 \\ 3 & -2 \end{bmatrix}$, find AB and BA .
5. The mean and standard deviation of two brands of bulbs are given below:

Brand	A	B
Mean life	1000hrs	820hrs
S.D	100hrs	65hrs

Which category of bulb has more consistency in its life?

6. Obtain the rank coefficient of correlation from the following data.

Price of Tea(₹)	75	88	95	70	60	80	81	50
Price of Coffee(₹)	120	134	150	115	110	140	142	100

SECTION- C

III Answer any 3 of the following each carries 12 marks. (3X12=36)

7. Solve by the method of Elimination:

$$2x - y = 5$$

$$x - 4y = -1$$

8. a) If 12 pumps working 7 hours a day can lift 2,800 gallons of water in 20 days, in how many days can 20 pumps working 9 hours a day lift 3000 gallons of water?

b) If $A = \begin{bmatrix} 2 & 3 \\ 1 & 4 \end{bmatrix}$, $B = \begin{bmatrix} -3 & -1 \\ 2 & 0 \end{bmatrix}$, find $3A - 2B$.

9. Calculate Mean, Median and Mode of the following data.

Profit less than(₹ Lakhs)	10	20	30	40	50	60	70	80
No.of Companies	4	16	40	76	96	112	120	125

10. Compute Pearson's correlation co-efficient for the following data and also calculate the probable error.

Price (₹)	45	48	52	56	60	64	68	72	76	80
Demand(Kg)	120	116	116	100	96	96	96	84	72	62

11. The heights (in inches) of a group of mothers and daughters are given below:

Height of Mother	71	68	66	67	70	71	70	73	72	65	66
Height of Daughter	69	64	65	63	65	62	65	64	66	69	62

Find the lines of regression and estimate the height of Daughter when the height of Mother is 69 inches.

*****ALL THE BEST*****