

**TILAK MAHARASHTRA VIDYAPEETH, PUNE**  
**BACHELOR OF BUSINESS ADMINISTRATION (B.B.A.)**

**EXAMINATION: MAY- 2024**

**SEMESTER - IV**

**Sub.: Statistical & Quantitative Methods (BBA22-412)**

**Date : 16/05/2024**

**Total Marks : 60**

**Time: 2.00 pm to 4.30pm**

- Instructions:** 1) All questions are compulsory.  
 2) Figures to the right indicate full marks.

**Q. 1. Choose the most appropriate option. (05)**

1.  $y = 3.85 + 0.54x$  then  $x = 20$ ,  $y = \dots\dots\dots$ 
  - a) 14.65
  - b) 146.5
  - c) 1.465
  - d) 1465
2. Probability of getting a king from 52 cards is  $\dots\dots\dots$ 
  - a)  $(4/52)$
  - b)  $(13/52)$
  - c)  $(1/52)$
  - d)  $(26/52)$
3.  $L = 40, f_0 = 24, f_m = 30, f_1 = 20$  &  $h = 10$  then Mode =  $\dots\dots\dots$ 
  - a) 43.75
  - b) 437.5
  - c) 4375
  - d) 4.375
4.  $r = 0.81$  between  $x$  &  $y$  then are  $\dots\dots\dots$ 
  - a) Highly correlated
  - b) Low correlation
  - c) Moderately correlated
  - d) No correlation
5. Mean = 20, Standard deviation = 2.49 then Coefficient of variation =  $\dots\dots\dots$ 
  - a) 12.45
  - b) 14.25
  - c) 1.452
  - d) 142.5

**Q. 2. State True / False (05)**

1. The mathematical relationship between the two variables under study is called *regression equation* which is essentially a prediction equation
  - a) True
  - b) False
2. The complement of the event  $A$  is denoted by  $A^c$  or  $\bar{A}$  and  $P(A^c) = 1 - P(A)$ .
  - a) True
  - b) False
3. Index numbers are Economical Barometers .
  - a) True
  - b) False
4. Simple moving average (SMA)
  - a) True
  - b) False
5. Correlation coefficient is used to interpret the data
  - a) True
  - b) False

**Q. 3. Write Short notes on (Any Three) (15)**

1. Significance of Measures of Dispersion
2. Partition values
3. Coefficient of correlation
4. Regression
5. Types of Time series

**Q. 4. Answer in detail (Any Two)**

**(20)**

1. Find the range and calculate the mean deviation of 84, 92, 73, 67, 88, 74, 91, 74
2. Estimate S.D & Variance of the given data .

Marks ( xi)	No of students ( fi )
20	6
9	4
25	16
50	7
40	8
80	2
	43

3. Calculate the Karl Perarson's coefficient of correlation for the following data (1, 2) (2, 4) (3 ,8) (4,7) (5, 10) (6,5) (7,14) (8,16) (9,2)(10,20)
4. In an agricultural experiment on the study of effect of depth of water in the soil (X) in ft. on the yield of as crop in lb. per plot (Y) the following data were obtained.

X	1.8	1.9	2.5	1.4	1.3	2.1	2.3
Y	200	370	450	160	90	440	380

Obtain the equation of line of regression of Y on X and estimate the yield when the depth of water in the soil is 2 ft.

**Q. 5. Case study**

**(15)**

Company	Mean Price(in Rs)	SD(Rs )
A	39.50	10.80
B	47.50	16.80

The following table shows the means and the standard deviations of prices of shares of two companies. The coefficient of correlation between the prices of two shares is 0.42. Find the most likely price of shares of company A when the price of share of company B is Rs. 55.

**Question**

- 1) Estimate the values
- 2) Write the Equation of Line of Regression
- 3) Estimate the value for Y = 55