

3700

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x	1	2	3	4	5	6
f	72	50	28	12	5	8

(b) A fair coin tossed 10 times, find the probability

(i) Exact six heads

(ii) At least six heads

(iii) At most six heads.

7. Do the following parts : (9×2)

(a) Find the (i) first; (ii) second; (iii) third; (iv) fourth moments for the numbers: 5, 8, 12, 14, 16.

(b) Find the mean deviation from the median, interquartile range and coefficient of quartile deviation for the following distribution of marks:

marks	0-50	50-60	60-70	70-80	80-90	90-100
No. of students	9	10	12	15	19	12

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3700

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Unique Paper Code : 6332491203

Name of the Paper : Fundamentals of Statistics

Name of the Course : B.Voc. (Web Designing)

Semester : II

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any five questions.

1. Do the following parts : (9×2)

- (a) Define mean and discuss the properties of mean.
- (b) Distinguish between discrete and continuous data with the help of suitable examples.

(500)

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2. Do the following parts : (9×2)

- (a) Calculate the standard deviation of the following values of the world's annual gold output (in millions of pounds) of 19 different years :

94, 95, 96, 93, 87, 79, 73, 69, 68, 78, 82, 83, 89, 95, 103, 108, 117, 130, 97.

- (b) Briefly discuss the multiplication rule of probability.

3. Do the following parts : (9×2)

- (a) Differentiate between correlation and regression.

- (b) Define kurtosis and give the formula for measure of kurtosis. Also, calculate Karl Pearson's first coefficient of skewness for the following distribution :

Length (mm)	25-30	30-35	35-40	40-45	45-50	50-55	55-60
Number of leaves	1	4	8	10	8	7	2

4. Do the following parts : (9×2)

- (a) Suppose that the probability model of X is given by

$$f_X(x) = \begin{cases} ke^{\frac{x}{5}} & 0 < x < \infty \\ 0 & \text{otherwise} \end{cases}$$

- (i) Find the value of k so that $f_X(x)$ is a pdf.

- (ii) Find $P(X > 5)$.

- (b) A certain kind of sheet metal has, on the average, five defects per 10 square feet. If we assume a poisson distribution, what is the probability that a 15 square feet sheet of metal will have at least six defects.

5. Do the following parts : (9×2)

- (a) Explain the properties of regression coefficient.

- (b) If X is normally distributed with mean 1 and standard deviation 2, find

(i) $P(X > 0)$

(ii) $P(3 < X < 4)$

6. Do the following parts : (9×2)

- (a) Draw less than and more than ogive curve for the following data