

UNIT TEST – 1 STATISTICS

Max. Mark: 25

Time: 1hr

1. Draw O gives for the following data

Marks	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	10	9	11	7	8	4	6

- a) How many students got mark below 60? (4+1)

2. Who is known as father of Modern Statistics?

- a) Conner b) R.A.Fisher c) P.C.Mahalanobis d) Gosset (1)

3. Write a short note on a) CSO b) ISI (2+2)

4. Represent the following data by suitable Bar diagram (5)

Item	Food	Clothing	Rent	Education	Others
Family A	500	200	100	400	200
Family B	600	250	100	500	300

5. O gives are the graphical representations of _____? (1)

- a) Relative frequencies b) Percentage Frequencies

- c) Frequencies d) Cumulative Frequencies

6. Represent the following data by suitable diagram (3)

Country	India	Sri Lanka	Malaysia	China	Japan
Export Quality	17	8	19	13	22

7. Write a short note on

- a) Primary data b) Secondary data (2)

8. The frequency distribution of height of students in a school is given below (4)

Height	145-160	160-175	175-190	190-205	205-220
No. of Students	60	185	470	325	60

UNIT TEST 2 -STATISTICS

HSE I Max.Mark: 25

Time: 1.00 hour

- 1) The mean scores obtained in an examination by group of 100 students was found to be 50. The mean scores obtained in the same examination by another group of 200 students 57. Find the mean of score obtained by both groups taken together. (3)

- 2) The AM and HM of a distribution are 10 and 8.1 then GM=..... (2)

- 3) Calculate mode of the following distribution

Age:	20-24	24-29	30-34	35-39	40-44	45-49	
Frequency	20	24	32	28	20	26	(4)

- 4) The variable values in a series which divide the series into half is called(1)

- 5) Compute Q.D for the distribution

Marks:	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	
No f students:	3	10	17	7	6	4	2	1	(4)

- 6) A study of 100 Engineering companies gives the following information

Profit :	0-10	10-20	20-30	30-40	40-50	50-60	
No of Companies:	8	12	20	30	20	10	

Find S.D of profit earned (5)

- 7) Eleven students were selected and asked how many Hrs each of them studied a day before the Final Examination in statistics. The answers were recorded here 8 11 5 4 5 0 2 6 9 3 2 FindQ. D (3)

- 8) For a group of 20 items $\sum x = 1452$, $\sum x^2 = 144280$ and mode=63.7. Obtain Karl Pearson Coefficient of Skewness ? (3)

UNIT TEST – 3 STATISTICS

Max. Mark: 25
Time: 1hr

1. Which of the following is not a non probability sampling method? (1)
a) Quota Sampling b) Judgment sampling
c) Stratified sampling d) Convenient sampling
2. Discuss briefly sampling and non sampling errors? (3)
3. In a factory, there are 6 skilled worker and 4 unskilled workers. What is the probability that
(i) A worker selected is a skilled worker
(ii) The two workers selected are unskilled (3)
4. Events A and B are given to be independent
 $P(A) = 0.35$ $P(A \cup B) = 0.6$ Find $P(B)$? (2)
5. If A and B are two events such that $P(A) = 1/3$
 $P(B) = \frac{3}{4}$ and $P(A \cup B) = \frac{11}{12}$, Find $P(A/B)$ and $P(B/A)$ (4)
6. Write the sample space when two dice are rolled (2)
7. In a systematic sampling, the 1st unit in the sample selected is the 6th and the sampling interval is 10 then the 3rd unit the sample will be _____ unit?
a) 9th b) 16th c) 26th d) 10th
8. A machine part is produced by three factories A, B and C. Their proportional production is 25%, 35%, 40% respectively. Also, the percentage of defective manufactured by 3 factories are 4%, 5% and 2% respectively. A part is selected at random and found is to be defective, what is the probability that the selected part belongs to factory B? (5)
9. (i) A coin is tossed and a single six sided die is rolled. Find the probability of landing on the head side of the coin and rolling a '3' on the die?
(iii) If $P(A) = 0.4$, $P(B) = 0.5$, $P(A \cap B) = 0.25$ Find $P(A \cup B)$? (2+2=4)

UNIT TEST- 1

Time: 1hr

HSE (II)

STATISTICS(A)

Max. Score.30

Topics: Correlation , Regression, Calculus and Random Variable

Questions 1 to 4 carries 2 scores each

(4x2=8)

- Write the type of correlation
 - Income and Expenditure
 - Beauty and Shoe size
- If $y=x^2+3x-10$ find $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$
- Find k if the pdf of x is given by $f(x) = kx^2, 0 < x < 3$
 $= 0$, else where
- Which of the following can be regression coefficients
 - (1, 3/2)
 - (2/3, 2/5)
 - (2, 3)
 - (1/2, 5/2)

Questions 5 to 8 carries 3 scores each

(4x3=12)

- A random variable x has the following probability distribution

x	-1	0	2
P (x)	0.3	K	0.5

- Find (i) k (ii). $E(x)$ (iii) $E(3x)$
- Find k if $\int_0^k x^2 dx = 72$
 - If the marginal profit $P=4-6x$, where x is the number of units of Production, find the profit function.
 - Let $2x + 7y-9=0$, is the regression line of y on x then b y x=_____
 - If $b_{yx} = 0.48$ $r=0.8$ $SD(x) = 3$ find $SD(y)$
 - Calculate correlation coefficient

X	32	30	28	26	25	21
y	40	21	35	24	22	23

Questions 9 to 10 carries 5 marks each

(2x5=10)

- Given two regression lines as $10y + 7x - 4 = 0$, and $5x + 9y - 1 = 0$
 - Identify the regression lines
 - Obtain the correlation coefficients
 - Obtain the mean values of x and y
- Find the mean and variance of x if pdf of x is given by $f(x) = x/2, 0 \leq x \leq 2$
 $= 0$, else where

UNIT TEST- 1

Time: 1hr

HSE (II)

STATISTICS(B)

Max. Score.30

Topics: Correlation , Regression, Calculus and Random Variable

Questions 1 to 4 carries 2 scores each

(4x2=8)

- Write the type of correlation
 - Intensity of light, distance
 - Beauty and Shoe size
- If $y=9x^2-6x+8$ find $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$
- Find k if the pdf of x is given by $f(x) = kx^2, 0 < x < 4$
 $= 0$, else where
- Which of the following can not be a regression coefficients
 - $(-1/2, -3/2)$
 - $(5/3, 2/5)$
 - $(2, 3)$
 - $(1, 1/2)$

Questions 5 to 8 carries 3 scores each

(4x3=12)

5. A random variable x has the following probability distribution

X	-1	0	2
P (x)	1/6	K	1/3

Find (i) k (ii) $E(x)$ (iii) $E(3x)$

- Find k if $\int_0^1 x^2 dx = 9$
 - If the marginal profit $P=6x-2$, where x is the number of units of Production, find the profit function.
- Let $2x - 7y - 3 = 0$, is the regression line of y on x then b y x = _____
 - If $b_{yx} = 0.64$ $r = 0.8$ $SD(x) = 4$ find $SD(y)$
- Calculate correlation coefficient

X	30	28	26	25	21	18
y	27	21	18	20	22	23

Questions 9 to 10 carries 5 marks each

(2x5=10)

- Given two regression lines as $3x + 2y - 26 = 0$, and $6x + y - 31 = 0$
 - Identify the regression lines
 - Obtain the correlation coefficients
 - Obtain the mean values of x and y
- Find the mean and variance of x if pdf of x is given by $f(x) = x/3, 0 \leq x \leq 4$
 $= 0$, else where