NETTUR TECHNICAL TRAINING FOUNDATION

DIPLOMA IN INFORMATION TECHNOLOGY & DATA SCIENCE – CP09

II SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-JUNE 2023

Subject: Mathematics **Total Time: 2 Hr.**

Subject Code: CP09207T **Total Marks: 50**

PART B

1.0 ANSWER ANY EIGHT OF THE FOLLOWING **2*8=16**

1.1 Find the area of rectangle whose length is 24cm and breadth is 16cm.

1.2 Evaluate $\int x^{-3}\, dx$

1.3 Define positive correlation. Giveone example

1.4 Find the area of square if it's one side is 10cm.

1.5 Flip a coin. What is the chance of getting a head (H)?

1.6 A dice is thrown, what is the probability that the number obtained is prime number?

1.7 If a horse runs 100 races and wins 5 times and loses the other 95 times, find the odds of the horse winning.

1.8 Find out the discrete data in the following?

a.12 Volts b.6 dogs c.23 bananas d.5 ladders

1.9 Find the distance between the points (7,-3) and (4,1)

1.10 $Evaluate \int_0^1 e^x\, dx$

2.0 ANSWER ANY SIX OF THE FOLLOWING **3*6=18**

2.1 The sides of a triangle are of lengths 8 cm, 15cm, 17cm.Find the area of the triangle.

2.2 Find the centroid of the triangle whose vertices are (-1, 4) ,(5,2) & (4,5)

2.3 Evaluate $\int_0^{\pi/2} sinx dx$

2.4 The sessional marks of 10 students out of 100 and also out of 20 is as given.

Out of 100: x=50,75,65,82,60,40,64,80,55,45

Out of 20 : y=10, 15,13,16,4,1 2, 8,16,11,9.

Find the correlation between the two variables

2.5 Find the probability that the sum of two faces is greater than or equal to10 when we roll a pair of fair dice? **-PTO-**

2.6 There are 5 marbles in a bag: 4 are blue, and 1 is red. Put the hand in the bag and pick a marble. What is the probability that a blue marble gets picked?

2.7 M(3, 8) is the midpoint of the line AB. A has the coordinates (-2, 3), Find coordinates of B

2.8 Evaluate $\int_0^{\pi/4} cosxdx$

3.0 ANSWER ANY FOUR OF THE FOLLOWING 4*4=16

3.1 Show that the quadrilateral with vertices (3,2) (0,5) (-3,2) and (0,-1) is a square

3.2 Find the equation of the line joining (5,6) and (5,8) .

3.3 Find the area under the curve y= x^3 between x=2 & x= 5

3.4 There are 2 blue and 3 red marbles in a bag. What is the probability of drawing 2 blue marbles?

3.5 Prove that the line passing through the points (9, 5)and (-1, 1) is parallel to the line passing through the points (3, -5)and (8, -3).

3.6 Evaluate $\int \frac{1}{1+sinx}\, dx$