Sri Raghavendra Tuition Center

unit - 1

10th Standard

Maths

Date : 17-10-24

Reg.No. :

Exam Time : 01:00 Hrs   Total Marks : 35

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Centum Book Available

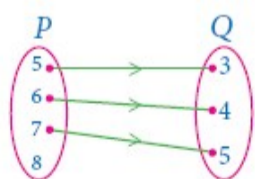I. Multiple Choice Question   5 x 1 = 5

1) If n(A x B) = 6 and A = {1,3} then n(B) is

   (a) 1   (b) 2   (c) 3   (d) 6

2) If A = {1, 2}, B = {1, 2, 3, 4}, C = {5, 6} and D = {5, 6, 7, 8} then state which of the following statement is true..

   (a) (A x C) ⊂ (B x D)   (b) (B x D) ⊂ (A x C)   (c) (A x B) ⊂ (A x D)   (d) (D x A) ⊂ (B x A)

3) If {(a, 8),(6, b)}represents an identity function, then the value of a and b are respectively

   (a) (8,6)   (b) (8,8)   (c) (6,8)   (d) (6,6)

4) Let A = {1, 2, 3, 4} and B = {4, 8, 9, 10}. A function f: A → B given by f = {(1, 4), (2, 8), (3, 9), (4,10)} is a

   (a) Many-one function   (b) Identity function   (c) One-to-one function   (d) Into function

5) If f: A → B is a bijective function and if n(B) = 7, then n(A) is equal to
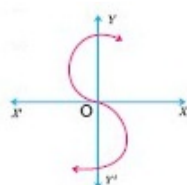
   (a) 7   (b) 49   (c) 1   (d) 14

II. 2 Marks   5 x 2 = 12

6) If A x B = {(3,2), (3, 4), (5,2), (5, 4)} then find A and B.

7) Let A = {1,2,3} and B = {x| x is a prime number less than 10}. Find A x B and B x A.

8) If B x A = {(-2,3), (-2,4),(0,3), (0,4),(3,3),(3,4)} find A and B.

9) The arrow diagram shows a relationship between the sets P and Q. Write the relation in

   (i) Set builder form

   (ii) Roster form

   (iii) What is the domain and range of R.

10) Let A = {1, 2, 3, 4,..., 45} and R be the relation defined as "is square of a number" on A. Write R as a subset of A x A. Also, find the domain and range of R.

11) Determine whether the graph given below represent functions. Give a reason for your answer concerning the graph.

III. 5 Marks   3 x 5 = 15

12) If A = {5,6}, B = {4,5,6}, C = {5,6,7}, Show that A x A = (B x B) ∩ (C x C)

13) Given the function $f:x \rightarrow x^2 - 5x + 6$, evaluate

i) f(-1)

ii) f (2a)

iii) f (2)

iv) f (x - 1)

14) Let A = {1,2,3,4} and B = { 2, 5, 8, 11,14} be two sets. Let f: A $\rightarrow$ B be a function given by f(x) = 3x − 1. Represent this function

(i) by arrow diagram

(ii) in a table form

(iii) as a set of ordered pairs

(iv) in a graphical form

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