## **Quiz - I**

**Department:** Department of Computer Engineering & Applications

**Course:** BTech **Year/Semester: II/III Section: All Session:** 2023-2024

**Subject Name & Code:** Discrete Mathematics and (BCSE-1010)

**Max. Marks:** 10 **Time allowed: 10 Mins Date:**

**Student Roll No.: Name of Student:**

**Note/Instruction (If any):** Attempt all questions

1: A \_\_\_\_\_\_\_ is an ordered collection of objects.

A: Relation B: Function

C: Set D: Proposition

2: What is the cardinality of the set of odd positive integers less than 10? (Moderate)

A:10 B:5

C:3 D:20

## 3: How many rational and irrational numbers are possible between 0 and 1? (Moderate)

A: Infinite B:0

C: Finite D:1

#### 4: Out of 800 boys in a school, 224 played cricket, 240 played hockey and 336 played basketball. Of the total, 64 played both basketball and hockey; 80 played cricket and basketball and 40 played cricket and hockey; 24 played all the three games. The number of boys who did not play any game is. (Difficult)

A: 160 B:240

C:216 D:128

#### 5: If A and B are any two sets, then A ∩ (A ∪ B) is equal to

A: A B: B

C: AB D:AC

6: The relation S={(w, x), (x, w), (x ,y), (x, z),(z, w),(z, y)} on the set E= { w,x, y, z} is

A: Antisysmmetric and transitive B: Antisysmmetric but not transitive

C: transitive but not antisysmmetric D not antisysmmetric and not transitive

7: Let R and S be binary relations on a set A. Suppose that R is reflexive, symmetric, and transitive and that S is symmetric, and transitive but is not reflexive. Which statement is always true for any such R and S?

A: R  S is symmetric but not reflexive and not transitive.

B: R  S is symmetric but not reflexive.

C: R  S is transitive and symmetric but not reflexive

D: R  S is reflexive and symmetric.

8: R is a relation on N given by N = {(x, y): 4x + 3y = 20}. Which of the following belongs to *R*?

A: (– 4, 12)  B: (5, 0)

C: (3, 4) D: (2, 4)

9: If A and B are non-empty sets, then A x B is a non-empty set of ordered pairs (x,y) such that x €A , y €B.

A: Above statement is correct B: Above statement is incorrect

C: Can’t say anything D: It is a well define function.

10: Consider the following statement

If P = {m, n} and Q = {n, m} then PxQ = {(m, n),(n, m)}

A: Above statement is correct B: Above statement is incorrect

C: Can’t say anything D: It is a well define relation.

Answers:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | A | B | C | D |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| 5 |  |  |  |  |
| 6 |  |  |  |  |
| 7 |  |  |  |  |
| 8 |  |  |  |  |
| 9 |  |  |  |  |
| 10 |  |  |  |  |