SMART TEST SERIES

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Name:		Subject:	Mathematics-11
Roll # :		Unit(s):	2,
Class:	Inter Part-I	Test:	Type 8 - Short Test (No Choice) - Marks=30
Date:		Time:	

Q.1 Circle the Correct Answers. (6x1=6)

1 $A \cup (A \cap B) =$ _____:

(A) B (B) $A \cap B$ (C) ϕ (D) A

2 $p \rightarrow q$ is called converse of:

(A) $\sim p \rightarrow q$ (B) $p \rightarrow q$ (C) $q \rightarrow p$ (D) $\sim q \rightarrow p$

3 Number of identity elements in any group is:

(A) 1 (B) 2 (C) 3 (D) None

4 **Ordinary addition is a ---------- operation on set of integers.**

(A) Primary (B) Secondry (C) Binary (D) None of the above

5 Addition of two vectors is a ----------binary operation on the set of coplaner vectors.

(A) Commutative (B) Associative (C) Distributive (D) None of the above

6 If a group G is such that $x*x = e \ \forall \ x \in G$, Where e is the identity element of G, then

(A) $x = x$ (B) $x = x^{-1}$ (C) $x = e$ (D) None of these.

Q.2 Write short answers of the following questions. (7x2=14)

(i) Write power set of A={a,b}.

(ii) Write each of the following sets in the descriptive and tabular forms: $\{x \mid x \in N \wedge 4 < x < 12\}$

(iii) Write each of the following sets in the descriptive and tabular forms: $\{x \mid x \in O \wedge 3 < x < 12\}$

(iv) Define tautology and show that $\sim q \wedge (p \rightarrow q) \rightarrow \sim p$ is a tautology.

(v) If $A = \{a, b, c\}$, $B = \{1, 2, 3\}$; whether $f = \{(a, 1), (b, 1), (c, 2)\}$ is a constant function from A to B?

(vi) Show that the adjoining table is that of multiplication of the elements of the set of residue classes modulo 5.

(vii) Whether a group can have more than one identity?

NOTE: Attempt the long question. (5+5=10)

3(a) Using Venn diagrams, verify the following result: $A \cup B = A \cup (A' \cap B)$

(b) Find the inverse of each of the following relations. Tell whether each relation and its inverse is a function or not. $\{(1, 3), (2, 5), (3, 7), (4, 9), (5, 11)\}$

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