

$$\neg q \vee \neg p$$

$$\neg p \wedge q$$

c) $\neg p \vee q$

d) $p \vee q$

(6) If the truth value of p and q are F and F respectively then the truth value of $\neg p \rightarrow \neg q$ is

a) T

b) F

c) both T and F

d) None of these

(7) If $p \leftrightarrow q \equiv (p \rightarrow q) \wedge r$ then r is

a) $p \rightarrow q$

b) $\neg p$

c) $q \rightarrow p$

d) $\neg q$

(8) $\neg(p \vee q) \vee (p \wedge \neg q) \equiv$

a) $\neg p$

b) p

c) $\neg q$

d) None of these .

(9) The proposition $p \wedge (q \wedge \neg q)$ is a

a) contradiction

b) Tautology

c) an argument

d) none of these .

(10) Contrapositive of ' $\neg p \rightarrow q$ ' is

a) $p \rightarrow q$

b) $\neg q \rightarrow \neg p$

c) $\neg q \rightarrow p$

d) $q \rightarrow \neg p$

(11) Let p: 'It is sunny afternoon' and q: 'It is hot today'. Then the following proposition $\neg p \wedge \neg q$ can be written as

a) It is not sunny afternoon and it is not hot today .

b) It is false that It is not sunny afternoon or it is not hot today .

c) It is false that It is sunny afternoon or it is hot today .

d) None of these .

(12) The negation of the statement 'No one wants to buy my house' is

a) All want to buy my house

b) Some one wants to buy my house

c) Every one wants to buy my house

d) None of these .

(13) 'Any proposition' \vee 'a tautology'

a) The proposition

b) tautology

c) contradiction

d) none of these

(14) If ${}^{2n}C_3 : {}^n C_2 = 44 : 3$ then the value of n is

a) 6

b) 5

c) 2

d) 7

(15) The number of three digit number that can be formed from the digits 1,3,5,7 is,

a) 24

b) 6

c) 4

d) none of these

a) $a \circ b = b \circ a$

b) $a \circ a = a$

c) $(a \circ b) \circ c = (b \circ c) \circ a$

d) $a \circ (b \circ c) = (a \circ b) \circ c$

(58) Which one of the following groupoid is semi-group

a) $(\mathbb{Z}, +)$

b) $(\mathbb{Z}, -)$

c) (\mathbb{R}, \div)

d) None

(59) In the group $Z_4 = \{[0], [1], [2], [3]\}$ under addition $[3] + [2] =$

a) $[5]$

b) $[0]$

c) $[1]$

d) $[2]$

(60) An edge whose two end vertices coincide is called

a) ring

b) adjacent edge

c) loop

d) none