**Unit -3**

1.  is equivalent to

**a**)  b)  c) Tautology d) Contradiction

1. Consider the statement, “Either  or ”. The negation of this statement is

**a**) **X<-2 or 2<x or -1<x<1** b) X<-2 or 2<x c) -1<x<1 d) -2<x<2

1.  is equivalent to

**a**)  b)  c)  d) e) 

1. Which of the following statement is the negation of the statement, “2 is even and -3 is negative”?

a) 2 is even and -3 is not negative b) 2 is odd and -3 is not negative

c) 2 is even or -3 is not negative **d) 2 is odd or -3 is not negative**

1.  is logically equivalent to

a)7p → 7q b)7p → q c)7p ∧ q **d)** **7p ˅ q**

1. 7q ∧ (p → q) → 7p is

a) Consistent b) inconsistent **c**) **Tautology** d) Contradiction

1. The statement  is a

a) Consistent b) Contradiction **c)** **Tautology** d) None of the above

1. Which one is the contrapositive of ?

a)  b)  **c**)  d) None of these

1. The truth or falsity of a given proposition is called its \_\_\_\_\_\_\_\_\_\_

a) Integer value **b**) **Truth value** c) Numerical value d) Actual value

1. The \_\_\_\_\_\_\_\_\_\_ of a proposition is generally formed by introducing the word “not” at the proper place

a) Conjunction b) Disjunction **c**) **Negation** d) Conditional

1. State true (T) or false (F)

I) The proposition “” is F when ‘p’ is F and ‘q’ is F.

II) The proposition “” is T when ‘p’ is T and ‘q’ is F.

a) (i) T (ii) T b) (i) F (ii) F **c**) **(i) T (ii) F**  d) (i) F (ii) T

1. State true (T) or false (F)

I)  II) 

a) (i) T (ii) T **b**) **(i) F (ii) F** c) (i) T (ii) F d) (i) F (ii) T

1. The following are the properties of logical equivalence

i)  ii) if  and  then  iii) p → q ≡ 7q→ p iv) q → p ≡ 7p → 7q

a) (i) T (ii) T (iii) F (iv) F

**b**) **(i) T (ii) T (iii) F (iv) T**

c) (i) F (ii) T (iii) F (iv) F

d) (i) T (ii) T (iii) T (iv) T

1. Let ‘p’ be “He is tall” and let ‘q’ be “He is handsome”. Then the statement “It is false that he is short or handsome” is:

a)  b) 7(7p ˅ q) c) p˅ 7q **d**) **7p ˅ q**

1. Which of the following proposition is a tautology?

**a**)  b)  c)  d) 

1. What is the converse of the following assertion? I stay only if you go.

**a**) **I stay if you go**  b) If you do not go then I do not stay

c) If I stay then you go d) If you do not stay then you go

1. Which of the following statement is the contra positive of the statement “If 4 is even and then -5 is negative”?

**a) If -5 is not negative and then 4 is not even**  b) If 4 is even then -5 is not negative

c) 4 is odd or -5 is not negative d) 4 is even and -5 is not negative

1. Which one is the inverse of ?

a)  **b**) **7p → 7q** c) 7q → p d) None of these

1. What is the dual of 

**a**)  b) 

c)  d) None of these

1. What is the dual of 

a)  b) 

c)  **d**) **None of these**

1.  is equivalent to

**a**)  b)  c) Tautology d) Contradiction

1.  is equivalent to

**a**)  b)  c)  d)  e) 

1.  is logically equivalent to

a)7p → 7q b)7p → q c)7p ∧ q **d) 7p ˅ q**

1. 7q ∧ (p → q) → 7p is

a) Consistent b) inconsistent **c**) **Tautology** d) Contradiction

1. The truth or falsity of a given proposition is called its \_\_\_\_\_\_\_\_\_\_

a) Integer value **b**) **Truth value** c) Numerical value d) Actual value

1. The \_\_\_\_\_\_\_\_\_\_ of a proposition is generally formed by introducing the word “not” at the proper place

a) Conjunction b) Disjunction **c**) **Negation** d) Conditional

1. Check whether RHS is a tautology
2. Tautology
3. Contradiction
4. **Contingency**
5. None
7. The solution is
8. What is the type of inference
9. **Direct proof**
10. Mathematical induction
11. CP rule
12. Inference
13. S.T R is a vaild inference from the premises PQ
14. Premises , implies
15. S.T logically follws from the premises
16. The rule used to convert is
17. Modus pollens
18. Modus tollens
19. Idempotent
20. **Conditional equivalence**
21. S.T logically follows from
22. The implication is called
23. Modus pollens
24. Modus tollens
25. Idempotent
26. **Contrapositive**
27. Conditional premise
28. If the conclusion is of the form then r is an
29. Rule T
30. Rule P
31. Premises
32. **Additional premises**
33. A set of premises is said to be consistent of their \_\_\_\_\_\_\_\_\_\_\_\_\_ is a contradiction
34. **Conjunction**
35. Disjunction
36. Negation
37. Conditional
38. Symbolize the statements
39. If Rama gets his degree (P), he will go for a job (q)
40. symbolize the statements
41. Krishna goes for a job (p) and he will not for higher studies (q)

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| Answer |
| 1. 1)a 2) a 3) a 4) d 5) d 6) c 7) c 8) c 9) b 10) c 11) c 12) b 13) b 14) d 15) a 16) a   17) a 18) b 19) a 20) d 21) a 22) a 23) d 24) c 25) b 26) c 27) c 28) b 29) a 30) c 31) d) 32) d 33) d 34) a) 35) b 36) b. |