**TDC (CBCS) Odd Semester Exam., 2020**
**held in March, 2021**



# PHILOSOPHY

**( 1st Semester )**

Course No. : PHPDSC/PHPGE-101T

**( Logic )**

*Full Marks* : 70
*Pass Marks* : 28

*Time* : 3 hours

*The figures in the margin indicate full marks for the questions*

## SECTION—A

Answer any *twenty* of the following questions : 1×20=20

1. What is the ideal of logic?
2. Is logic a positive science?
3. The word 'logic' is derived from which word?
4. Mention any one fundamental law of thought.

5. Can validity or invalidity be predicated of proposition?

6. On what does the validity of an argument depend?

7. Is logic concerned with formal truth or material truth or both?

8. What is an argument?

9. How many terms are there in a proposition?

10. How many kinds of proposition do we get according to the mixed principle of quality and quantity?

11. On what ground modern logicians classify propositions?

12. Give a symbolic example of universal affirmative proposition.

13. Illustrate subjectless proposition.

14. Into how many kinds general proposition can be divided?

15. How many kinds of opposition of propositions are there in traditional logic?



*( Continued )*

16. What kind of opposition exists between *I* and *O* propositions?

17. What is inference?

18. What are the two kinds of deductive inference?

19. Can *O* proposition be converted?

20. Which term determines the figure of a syllogism?

21. Name one valid mood of the first figure.

22. State one rule of conversion.

23. What is the position of the middle term in the fourth figure?

24. "Some men are wise." Convert.

25. Are variables a type of symbols?

26. What is constant?

27. What is the symbol of implication?

28. What is truth value?

29. Is the expression $(\sim p)$ a truth function?

30. If $p$ is true, $q$ is false, then what is the truth value of $p \cdot q$?

31. How many basic truth functions are there in logic?

32. Mention one utility of symbols in logic.

33. How many rules of inference are there?

34. State the rule of Modus Tollens.

35. State the rule of hypothetical syllogism.

36. State the rule of conjunction.

37. State the rule of addition.

38. State the rule of simplification.

39. $E \supset \sim F$

$\therefore (E \supset \sim F) \vee (\sim G \supset H)$

State the rule of inference justifying the conclusion.

40. $(\sim R \equiv S) \vee (T \vee U)$

$\sim (\sim R \equiv S)$

$\therefore T \vee U$

State the rule of inference justifying the conclusion.



( Continued )

## SECTION—B

Answer any *five* of the following questions : 2×5=10

**41.** What is an argument form?

**42.** When an argument becomes invalid?

**43.** What is general proposition?

**44.** What do you mean by 'opposition of propositions'?

**45.** State two rules of obversion.

**46.** What is mood of a syllogism?

**47.** What do you mean by truth function?

**48.** Symbolize the following : 1+1=2

*(a)* If it rains, then there will be good harvest.

*(b)* Neither Gita nor Rita will join the party.

49. What is meant by formal proof of validity?

50. State the justification for each line that is not a premise for the following argument :

$G$
$H$ $/ \therefore (G \cdot H) \vee I$
$G \cdot H$
$(G \cdot H) \vee I$

## SECTION—C

Answer *any* **five** questions

51. What is logic? Discuss the nature and scope of logic. 2+6=8

52. What is meant by 'truth'? Explain the relation between truth and validity with examples. 2+6=8

53. What is proposition? Explain the four-fold scheme of proposition with examples. 2+6=8

54. Explain the traditional square of proposition. How does it differ from Aristotelian square of opposition? 6+2=8

55. Define categorical syllogism. Explain the six rules of syllogism as put forward by I. M. Copi. 2+6=8



( Continued )

**56.** Test the validity or invalidity of the following syllogistic arguments by means of Venn diagram : 4+4=8

*(i)* Some reformers are philosophers, so, some idealists are philosophers, since all reformers are idealists.

*(ii)* No Indians are Greeks, but some Indians are Aryans, therefore, some Greeks are not Aryans.

**57.** Use truth tables to determine the validity or invalidity of the following argument forms : 4+4=8

*(i)* $p \vee q$
$\sim p$
$\therefore q$

*(ii)* $p \supset (q \vee r)$
$\therefore \sim q \supset \sim p$

**58.** Prove the invalidity of the following by using the shorter truth-table method : 4+4=8

*(i)* $A \supset B$
$C \supset D$
$A \vee D$
$\therefore B \vee C$

*(ii)* $R \supset (Q \vee P)$
$(Q \cdot P) \supset O$
$\therefore R \supset O$

**59.** State the justification for each line that is not a premise for the following arguments : 4+4=8

*(i)* 1. $(K \vee L) \supset (M \vee N)$
2. $(M \vee N) \supset (O \cdot P)$
3. $K \quad /\therefore O$
4. $K \vee L$
5. $M \vee N$
6. $O \cdot P$
7. $O$

*(ii)* 1. $A \supset B$
2. $A \vee (C \cdot D)$
3. $\sim B \cdot \sim E \quad /\therefore C$
4. $\sim B$
5. $\sim A$
6. $C \cdot D$
7. $C$

**60.** Construct formal proof of validity for the following arguments : 4+4=8

*(i)* $A \cdot B$
$(A \vee C) \supset D \; /\therefore A \cdot D$

*(ii)* $(E \vee F) \supset (G \cdot H)$
$(G \vee H) \supset I$
$E \; /\therefore I$

★ ★ ★