TDC (CBCS) Odd Semester Exam., 2023

PHILOSOPHY

(5th Semester)

Course No. : PHIGE–501T

(Logic)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer *twenty* questions, selecting *four* from each Unit :

$1 \times 20 = 20$

UNIT—I

1. Is logic a positive science?

2. Give an example of the law of contradiction.

3. "A proposition is either true of false." Is it true?

4. Give an example of an 'argument form'.

5. What is sound argument?

24J/80   (Turn Over)

UNIT—II

6. Name the opposition that exists between A and O propositions.

7. Name the opposition in which two propositions can be true together but two propositions cannot be false together.

8. Give example of a subject-predicate proposition.

9. Give example of a universal negative proposition.

10. Which term is distributed in a particular negative proposition?

Unit—III

11. State one rule of obversion.

12. Name one valid mood of Fourth Figure.

13. What is the position of middle term in Third Figure?

14. Name the fallacy if we draw particular conclusion from two universal premises.

15. How many moods of syllogism are there in wider sense?

(Continued)

Unit—IV

16. When a disjunctive function becomes false?

17. Name the symbol for negation.

18. "In construction of truth table, the number of variables will be the power of the number 2." Is the statement true?

19. "In indirect method of truth table in testing validity, the conclusion is assumed to be true and premise false." Is it true?

20. When an implicative function becomes false?

Unit—V

21. How many elementary rules of inference are there?

22. State the rule of absorption.

23. State the rule of disjunctive syllogism.

24. State the rule of inference

$$(D \vee E) \cdot (F \vee G)$$
$$\therefore \quad D \vee E$$

(Turn Over)

25. State the rule of inference

$$(M \supset \sim N) \cdot (S \supset \sim T)$$

$$M \lor S$$

$$\therefore \quad \sim N \lor \sim T$$

SECTION—B

Answer *five* questions, selecting *one* from each Unit :

2×5=10

Unit—I

26. What is argument form?

27. What is argument?

Unit—II

28. Define, with example, compound proposition.

29. Define, with symbolic representation, alternative proposition.

Unit—III

30. What is the contrapositive of the following?

"Every mathematician is a philosopher."

31. What is simple conversion? Give example.

Unit—IV

32. What is variable?

33. Symbolize the following :

"If it is not the case that Rosy is not elected, then Lucky will be selected."

Unit—V

34. What is the meaning of Modus Tollens (MT)?

35. State the justification for each line that is not a premise for the following arguments :

(a) A

(b) B / $\therefore$ (A $\lor$ C)·B

(c) A $\lor$ C

(d) (A $\lor$ C)·B

SECTION—C

Answer *five* questions, selecting *one* from each Unit :

8×5=40

Unit—I

36. What is logic? Discuss briefly the nature of logic.

2+6=8

37. When does a proposition become true? Explain the relation between Truth and Validity. $2+6=8$

Unit—II

38. Explain, with examples, different kinds of the traditional square of opposition. How does it differ from Aristotelian square of opposition? $6+2=8$

39. Define, with examples, different kinds of simple proposition. 8

Unit—III

40. What is conversion? What is obversion? State any two differences between conversion and obversion. "All soldiers are heroes."

(Convert and obvert.)

$2+2+2+2=8$

41. Reduce the following into standard form of categorical syllogism and test their validity by means of Venn diagram technique : $4+4=8$

   (a) Some teachers are not good orators. All good orators are successful persons. Therefore some teachers are not good successful persons.

   (b) All great poets are philosophers. Some scientists are philosophers. Therefore some scientists are great poets.

(Continued)

Unit—IV

42. Use truth tables to characterize the following statement forms as tautologies, contradictory or contingent : $4+4=8$

   (a) $[(p \supset q) \cdot \sim q] \supset \sim p$

   (b) $\sim [(\sim p \cdot \sim q) \supset \sim p]$

43. Prove invalidity of the following by using shorter truth table method : $4+4=8$

   (a) $A \supset B$
            $C \supset D$
            $A \vee D$
        $\therefore B \vee C$

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

Unit—V

44. Construct formal proof of validity for the following : $4+4=8$

   (a)   (i) $A \vee \sim I$

        (ii) $D \supset I$

        (iii) $\sim A$

        (iv) $(\sim D \cdot \sim I) \supset W$

(Turn Over)

(b) (i) M⊃N

(ii) N⊃O

(iii) (M⊃O)⊃(N⊃P)

(iv) (M⊃P)⊃Q   /∴ Q

45. What is formal proof of validity? Why do we need a proof procedure known as formal proof of validity? Explain briefly.   3+5=8

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