2021/TDC/CBCS/ODD/
PHISEC–501T/065

TDC (CBCS) Odd Semester Exam., 2021
held in March, 2022

PHILOSOPHY

(5th Semester)

Course No. : PHISEC–501T

(Logical Reasoning—II)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks
for the questions

SECTION—A

Answer any *fifteen* of the following questions :   1×15=15

1. What are the two types of logical reasoning?

2. What is the literal meaning of 'Anumāna'?

3. How many propositions are find in Parārthānumāna?

4. What are the two kinds of Vyāpti?

5. What is Hetu?

6. What kind of fallacies of inference are find in Nyāya logic?

7. How many fallacies of inferences are there in Indian logic?

8. Give an example of Satpratipakṣa Hetu.

9. How many kinds of symbols are used in logic?

10. If P is true and Q is false then what will be the value of $P \vee Q$?

11. What is the symbol of Implicative function?

12. If P is false then what will be the value of $\sim P$?

13. State the rule of commutation.

14. How many sets of rules are there for formal proof of validity?

15. Can formal proof of validity prove the invalidity of an argument?

16. State the rule of Disjunctive Syllogism.

17. What is the meaning of the Latin word 'Reductio ad Absurdum'?

18. Is shorter truth-table method a decision procedure?

19. Can an empty set be the member of another set?

20. Who is the pioneer of the concept of set?

SECTION—B

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

21. What is Svārthānumāna?

22. What is Vyāpti?

23. What is Hetvābhāsa?

24. Write the name of different kinds of Hetvābhasa.

25. How do you determine the invalidity of an argument?

26. Define truth function.

27. State two differences between rules of inference and rules of replacement.

28. Name the sets of rules of formal proof of validity.

29. What is an empty or null set?

30. State two advantages of shorter truth-table method.

SECTION—C

Answer any *five* of the following questions : 5×5=25

31. Distinguish between Deductive Reasoning and Inductive Reasoning.

32. Explain with example the different kinds of Anumāna, according to Goutama.

33. Explain Viruddha Hetu with example.

34. What is Bādhita Hetu? What is the difference among Satpratipakṣa, Viruddha and Bādhita?

35. Use truth table to characterize the following statement forms as tautologous, contradictory or contingent : 2½+2½=5

(i) $(p \lor q) \equiv \sim p \supset q$

(ii) $(p \cdot q) \supset p$

36. Use truth table to determine the validity or invalidity of the following argument forms : 2½+2½=5

(i) $p \lor q$
p
$\therefore \sim q$

(ii) $p \supset q$
$q \supset p$
$\therefore p \lor q$

37. Construct formal proof of validity of the following : 2½+2½=5

(i) $J \supset I$
$\sim H \supset (G \supset F)$
$H \lor (J \lor G)$
$\sim H$
$\therefore I \lor F$

(ii) $(Z \lor Y) \supset X$
$(X \lor Y) \supset [Z \supset (W \equiv V)]$
$Z \cdot W$
$\therefore W \equiv V$

(6)

38. Construct conditional proof to prove the validity of the following : $2\frac{1}{2}+2\frac{1}{2}=5$

    (i) $(G \lor H) \supset (S \cdot T)$

           $(T \lor U) \supset (C \cdot D)$

         $\therefore G \supset C$

    (ii) $R \supset B$

           $R \supset (B \supset F)$

           $B \supset (F \supset H)$

         $\therefore R \supset H$

39. What is set? What is its importance in logical study? $2+3=5$

40. Prove the invalidity of the following argument forms with the help of shorter truth-table method : $2\frac{1}{2}+2\frac{1}{2}=5$

    (i) $Z \supset Y$

           $X \supset W$

           $Z \lor W$

         $\therefore Y \lor X$

    (ii) $\sim(E \cdot F)$

           $(\sim E \cdot \sim F) \supset (G \cdot H)$

           $H \supset G$

         $\therefore G$

★ ★ ★