021/TDC/CBCS/ODD/PHIHCC–102T/053

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

PHILOSOPHY

(1st Semester)

Course No. : PHIHCC–102T

(Logic—I)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

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

SECTION—A

Answer any *ten* of the following :   2×10=20

1. What is logic? Is logic a positive science?

2. Define Argument form. Give an example of an Argument.

3. Can truth or falsity be predicated of propositions? When is an Argument said to be invalid?

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4. How many kinds of compound propositions are there? Give an example of existential proposition.

5. Name the proposition which is about classes. Give an example of alternative proposition.

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

7. What is conversion? Can O proposition be converted?

8. What is obversion? Obvert the following proposition :

Some men are honest.

9. What is Middle Term? What is the position of the Middle Term in the 3rd Figure?

10. Draw the truth-table for implicative truth-function.

11. Symbolise the following propositions :

(a) Iran raises the price of oil but Libya does not raise the price of oil.

(b) If Rajib wins the first prize, then Mohan wins the second prize.

(Continued)

(3)

12. What is Shorter Truth-Table Method?

13. How many rules of inference are there? State the rule of Modus Tollens (MT).

14. State the rules of Disjunctive Syllogism (DS) and Hypothetical Syllogism (HS).

15. State the rules of Absorptions (Abs) and Addition (Add).

SECTION—B

Answer any *five* of the following questions : 10×5=50

16. When does an argument become valid? Discuss the nature and scope of logic. 2+4+4=10

17. What is truth? Explain the relationship between the validity and invalidity of an argument and truth and falsehood of its premises and conclusion. 2+8=10

18. Define Proposition. Explain the Four-Fold Scheme of proposition with examples. State which terms are distributed in each of these propositions. 2+6+2=10

(Turn Over)

(4)

19. What do you mean by opposition of propositions? Explain the traditional square of opposition. 2+8=10

20. What is Categorical Syllogism? State Copi's Six Rules for testing the validity of categorical syllogism. Mention the fallacies that arise when these rules are violated. 2+6+2=10

21. Test the following syllogisms by means of Venn Diagram technique : 5+5=10

   (a) Some philosophers are mathematicians; hence, some scientists are philosophers; since all scientists are mathematicians.

   (b) No weaklings are labour leaders, because no weaklings are true liberals, and all labour leaders are true liberals.

22. Test the validity or invalidity of the following arguments by truth-table method : 5+5=10

   (a) $U \supset (V \vee W)$

   $(V \cdot W) \supset \sim U$

   $\therefore U$

   (b) $p \supset (q \supset r)$

   $q \supset (r \supset s)$

   $\therefore p \supset r$

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(Continued)

(5)

23. Test the invalidity of the following arguments using shorter truth-table method : 5+5=10

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

   $(D \vee E) \supset G$

   $\therefore A \supset G$

   (b) $A \supset B$

   $C \supset D$

   $A \vee D$

   $\therefore B \vee C$

24. Construct formal proof of validity for the following : 5+5=10

   (a) $A \supset B$

   $C \supset D$

   $A \vee C / \therefore (A \cdot B) \vee (C \cdot D)$

   (b) $(N \vee O) \supset P$

   $(P \vee Q) \supset R$

   $Q \vee N$

   $\sim Q / \therefore R$

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(6)

25. *(a)* What is formal proof of validity?

(b) Construct formal proof of validity for the following :

    (i) $(E \vee F) \cdot (G \vee H)$

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

       $\sim G / \therefore H$

    (ii) $A \supset B$

       $A \vee C$

       $C \supset D / \therefore B \vee D$ $2+(4+4)=10$

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