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

PHILOSOPHY

(1st Semester)

Course No. : PHPHCC–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

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

(a) What is an argument?

(b) Give an example of an argument form.

(c) Why is logic said to be a normative science?

(d) What is validity?

(e) Name the opposition that exists between *A* and *I*, and '*A* and *O*' proposition.

(f) What is general proposition asserting relation between classes?

(g) Give examples of class-membership proposition and relational proposition.

(h) Mention different kinds of simple proposition.

(i) What is contraposition?

(j) What is conversion by limitation?

(k) What is standard-form categorical syllogism?

(l) Mention any two valid moods of the Fourth figure.

(m) What is truth table method?

(n) What is the symbolization of the following statement? "It is not the case that neither Rosy nor Lucky is elected."

(o) "'$p \supset q$' is equivalent to '$\sim q \supset \sim p$' "—Is the statement true?

(Continued)

(p) What is conjunctive truth function?

(q) Give an example of subject-predicate proposition.

(r) State the rule of constructive dilemma and hypothetical syllogism.

(s) $(A \cdot B) \cdot (X \vee Y)$
$\therefore A \cdot B$
Name the rule of inference by which the conclusion follows.

(t) What is the meaning of modus ponens (MP)?

SECTION—B

Answer *any* **five** questions

2. Explain the relation between the validity or invalidity of an argument and truth and falsehood of its premises and conclusion. 10

3. "Logic is the study of methods and principles used to distinguish between correct (good) and incorrect (bad) argument." Briefly explain. 10

(Turn Over)

4. What is general proposition? Explain with examples three distinct forms of general proposition. 2+8=10

5. Explain with examples different kinds of compound proposition. 10

6. Test the following categorical syllogisms and name the fallacies involved, if any : 5+5=10

   (a) All players are actors, because all players are health conscious and actors of health conscious.

   (b) All movies are moving pictures, therefore some photographs are moving pictures and some photographs are not movies.

7. Test the following syllogisms by means of Venn diagram technique : 5+5=10

   (a) No poets are accountants
   Some artists are poets
   ∴ Some artists are accountants

   (b) All human beings are mammals
   Some underwater creatures are mammals
   ∴ Some underwater creatures are human beings

(Continued)

8. Symbolize the following : 2×5=10

   (a) If Anil's coming would cause Bimal to leave, then arrival of Chandan is not needed. (*A*, *B*, *C*)

   (b) It is not the case that either Anil or Bimal will come. (*A*, *B*)

   (c) Ram and Shyam will both not pass the examination. (*R*, *S*)

   (d) If it is not the case that Anil is elected then Bimal will be selected. (*A*, *B*)

   (e) Bimal will not stop teasing unless Anil shouts. (*B*, *A*)

9. Test the following arguments by the truth table method : 5+5=10

   (a) If Umesh be an artist then Mahesh is a philosopher or Jogesh is a scientist. Jogesh is not a scientist. So Umesh is not an artist. (*U*, *M*, *J*)

   (b) $(A \vee B) \supset (A \cdot B)$
   $\sim (A \vee B)$
   $\therefore \sim (A \cdot B)$

(Turn Over)

10. Construct formal proof of validity. 5+5=10

(a) (i) $X \supset I$

(ii) $(X \cdot I) \supset Y$

(iii) $(X \supset Y) \supset \sim H$

(iv) $H \vee N / \therefore N$

(b) (i) $(M \supset L) \cdot (K \supset J)$

(ii) $(I \supset H) \cdot (H \supset G)$

(iii) $M \vee I / \therefore L \vee H$

11. Discuss briefly the method of deduction. 10

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