2022/TDC/ODD/SEM/PHISEC-501T/065

TDC (CBCS) Odd Semester Exam., 2022

State two points of differences between

What are the how you say a variety care

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

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UNIT—I

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1. Answer any three of the following questions:

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1×3=3

- (a) What is Deductive Reasoning?
- (b) What is Anumāna?
 - (c) Define Pakṣatā.
 - (d) What is Parāmarśa?

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2. Answer any one of the following questions:

Deduction and Induction.

(a) State two points of differences between

(3)

5. Answer any one of the following questions:

(a) What is Hetvābhāsa?

(b)	What are the two types of Vyāpti? Give example of each.	an example.	uddha Hetvābhāsa with
3. (a)	Briefly discuss the different classifications of Anumāna.	6. (a) Briefly explain the after the Naiyāyika	five types of Hetvābhāsa s
(b)	What is Vyāpti? Briefly discuss how Vyāpti is established. 1+4=5	(b) What are the five characteristics of a valid Hetu? Mention the Hetvābhāsa that arises upon the violation of each characteristic.	
	UNIT—II swer any three of the following questions:	upon the violation	mitan and igh
(a)	1×3=3 According to Nyāya logic, how many characteristics does a valid Hetu have?		1×3=3
(b)	What kind of fallacies of inferences is found in Nyāya logic?	 (a) What is symbolic logic? (b) Give the modern definition of a proposition. (c) If p is true and q is false, then what will be the truth-value of p-q? 	
(c)	"Fire is cold, because it is a substance." Mention the Hetvābhāsa involved in this inference.		
(d)	How many types of Asiddha Hetvābhāsa are there?		of negative function?
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(4)

8. Answer any one of the following questions:

- (a) What is a variable? What is a constant?
- (b) What is Truth-Table?
- 9. (a) Use truth-table to characterize the following statement-forms as tautologous, contradictory or contingent: 2½+2½=5

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

(ii)
$$(p\supset q)\supset [\sim p\supset (q\vee\sim q)]$$

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(b) Use truth-table to determine the validity or invalidity of the following argument-forms:

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 $2\frac{1}{2} + 2\frac{1}{2} = 5$

in
$$(p \lor q) \supset (p \cdot q)$$

$$p \lor q$$

$$p \lor q$$

$$p \lor q$$

$$p \lor q$$

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

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

$$\sim \sim (p \supset \sim q)$$

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(Continued)

(5)

UNIT-IV

10. Answer any three of the following questions:

 $1 \times 3 = 3$

- (a) How many elementary rules of inference are there?
- (b) State the rule of hypothetical syllogism.
- (c) Are the rules of replacement just logical equivalences?
- (d) What is the meaning of 'Reductio ad Absurdum'?

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11. Answer any one of the following questions:

(a) State two differences between the rules of inference and the rules of replacement.

(b) State the rules of transposition and exportation.

12. (a) Construct formal proof of validity for the following: 2½+2½=5

(i)
$$(H \lor I) \supset J \cdot (K \cdot L)$$

(ii)
$$T \cdot (U \lor V)$$
 for the set of $T \supset [U \supset (W \cdot X)]$ designated (4)

$$(T \cdot V) \supset \sim (W \lor X) / : W \equiv X$$

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Or

(b) Construct indirect proof to prove the validity of the following:

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(i) $A \vee (B \cdot C)$ ADC/:.C

(ii) $(F \vee G) \supset (D \cdot E)$ $(E \lor H) \supset Q$ to include FVH /: Q to your all of A.

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13. Answer any three of the following questions:

: another up attive that that he was the same 1×3=3

- (a) In shorter truth-table method, what truthvalue is assigned to the conclusion?
- (b) When does an argument become invalid?
 - (c) Define set.
 - Who is regarded as the father of set theory?
- 14. Answer any one of the following questions:
 - (a) Briefly explain the two steps employed in the shorter truth-table method.
 - (b) Distinguish between finite set and infinite set with examples.

(Continued)

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15. (a) Prove the invalidity of the following argument-forms with the help of shorter truth-table method: 21/2+21/2=5

> (i) $A \supset B$ $B \cdot C$ $C \lor D$ $\therefore A \lor D$

 $A \supset B$ (ii) $B\supset C$ $:: C \supset A$

Or

(b) If $A = \{2, 3, 4, 5, 6\}, B = \{3, 4, 5, 6, 7\}$ and $C = \{4, 5, 6, 7, 8\}$, then find the following: 21/2+21/2=5

(i) $(A \cup B) \cap (A \cup C)$

(ii) $(A \cap B) \cup (A \cap C)$

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