



PAR-1601210101051200 Seat No. _____
Third Year B. A. (Sem. V) (CBCS) Examination
October / November - 2018
Philosophy
(Introduction to Symbolic Logic)

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

સૂચના : બધા જ પ્રશ્નોના ગુણ સમાન છે.

1 પરંપરાગત તર્કશાસ્ત્રની મર્યાદાઓ વિગતે વર્ણવો. 14

અથવા

1 વિધાનપરક તર્કશાસ્ત્રની આવશ્યકતા, કાર્યક્ષેત્ર સાથે જણાવો. 14

2 વિધાન એટલે શું ? વિધાનપરક તર્કશાસ્ત્રના પરિપ્રેક્ષ્યમાં વિધાનના વિવિધ પ્રકારોની ચર્ચા કરો. 14

અથવા

2 સત્યતા કોષ્ટક રચો : (બે) 14

1 $(p \supset q) \supset \sim p \supset \sim q$

2 $(p \vee q) \supset \sim p \supset q$

3 $\sim(\sim p \cdot \sim q) \supset (p \vee q)$

3 M.P., H.S. અને D.S.ના નિયમોને ઉદાહરણ સહિત સમજાવો. 14

અથવા

3 રૂપલક્ષી સાબિતી આપો : (બે) 14

(1) 1 $(A \cdot B) \supset [A \supset (D \cdot E)]$

2 $(A \cdot B) \cdot C \quad \therefore D \vee E$

- (2) 1 $(\sim X \vee \sim Y) \supset [A \supset (P \cdot \sim Q)]$
 2 $(\sim X \cdot \sim R) \supset [(P \cdot \sim Q) \supset Z]$
 3 $(\sim X \cdot \sim R) \cdot (\sim Z \vee A) \quad \therefore A \supset Z$
- (3) 1 $(P \cdot R) \cdot \sim T$
 2 $T \vee (F \cdot G)$
 3 $(F \cdot G) \supset H \quad \therefore (H \cdot P) \vee F$

4 તાર્કિક કારક ' \supset ' અને ' \vee 'નું સત્યતામૂલ્ય વિગતે સમજાવો. 14

અથવા

4 રૂપલક્ષી સાબિતી આપો : 14

- (1) 1 $O \supset (P \supset Q)$
 2 $P \supset (Q \supset R) \quad \therefore O \supset (P \supset R)$
 3 $(O \cdot P) \supset Q$ _____
 4 $(P \cdot Q) \supset R$ _____
 5 $(Q \cdot P) \supset R$ _____
 6 $O \supset (P \supset R)$ _____
 7 $(O \cdot P) \supset (P \supset R)$ _____
 8 $O \supset [P \supset (P \supset R)]$ _____
 9 $O \supset [(P \cdot P) \supset R]$ _____
 10 $O \supset (P \supset R)$ _____

- (2) 1 $J \cdot (K \cdot L)$
- 2 $(K \cdot J) \supset [M \vee (N \vee O)]$
- 3 $\sim M \cdot (\sim P \cdot \sim O) \quad / \therefore N$
- 4 $(J \cdot K) \cdot L$ _____
- 5 $J \cdot K$ _____
- 6 $K \cdot J$ _____
- 7 $M \vee (N \vee O)$ _____
- 8 $\sim M$ _____
- 9 $N \vee O$ _____
- 10 $O \vee N$ _____
- 11 $(\sim M \cdot \sim P) \cdot \sim O$ _____
- 12 $\sim O \cdot (\sim M \cdot \sim P)$ _____
- 13 $\sim O$ _____
- 14 N _____

5 નોંધ લખો : (કોઈ પણ બે)

14

(1) વસ્તુલક્ષી ગર્ભિતાર્થનો આંતર વિરોધ.

(2) C.P.ના નિયમથી સાબિત કરો :

1 $(A \vee B) \supset (C \cdot D)$

2 $(D \vee E) \supset F \quad / \therefore A \vee F$

(3) द्विभार्गी नियम De.M ने सङ्घटित समझवो.

(4) I.P.ना नियमथी साभित करो :

$$1 \quad A \supset (B \cdot C)$$

$$2 \quad (B \vee D) \supset E$$

$$3 \quad D \vee A \quad / \therefore E$$

ENGLISH VERSION

Instruction : All questions carry equal marks.

1 Describe giving details the limitations of Traditional Logic. 14

OR

1 State the necessity of Propositional Logic with its scope. 14

2 What is Proposition ? With reference to the Propositional Logic discuss various types of proposition. 14

OR

2 Form the truth-table : (any two) 14

$$1 \quad (p \supset q) \supset \sim p \supset \sim q$$

$$2 \quad (p \vee q) \supset \sim p \supset q$$

$$3 \quad \sim(\sim p \cdot \sim q) \supset (p \vee q)$$

3 Explain the laws of M.P., H.S. and D.S. with examples. 14

OR

3 Give Formal Proof : (any two) 14

$$(1) \quad 1 \quad (A \cdot B) \supset [A \supset (D \cdot E)]$$

$$2 \quad (A \cdot B) \cdot C \quad / \therefore D \vee E$$

$$(2) \quad 1 \quad (\sim X \vee \sim Y) \supset [A \supset (P \cdot \sim Q)]$$

$$2 \quad (\sim X \cdot \sim R) \supset [(P \cdot \sim Q) \supset Z]$$

$$3 \quad (\sim X \cdot \sim R) \cdot (\sim Z \vee A) \quad / \therefore A \supset Z$$

$$(3) \quad 1 \quad (P \cdot R) \cdot \sim T$$

$$2 \quad T \vee (F \cdot G)$$

$$3 \quad (F \cdot G) \supset H \quad / \therefore (H \cdot P) \vee F$$

4 Explain giving details the truth value of Logical Constant 14
' \supset ' and ' \vee ' :

OR

4 Give formal proof :

$$(1) \quad 1 \quad O \supset (P \supset Q)$$

$$2 \quad P \supset (Q \supset R) \quad / \therefore O \supset (P \supset R)$$

$$3 \quad (O \cdot P) \supset Q \quad \underline{\hspace{2cm}}$$

$$4 \quad (P \cdot Q) \supset R \quad \underline{\hspace{2cm}}$$

$$5 \quad (Q \cdot P) \supset R \quad \underline{\hspace{2cm}}$$

$$6 \quad O \supset (P \supset R) \quad \underline{\hspace{2cm}}$$

$$7 \quad (O \cdot P) \supset (P \supset R) \quad \underline{\hspace{2cm}}$$

$$8 \quad O \supset [P \supset (P \supset R)] \quad \underline{\hspace{2cm}}$$

$$9 \quad O \supset [(P \cdot P) \supset R] \quad \underline{\hspace{2cm}}$$

$$10 \quad O \supset (P \supset R) \quad \underline{\hspace{2cm}}$$

- (2) 1 $J \cdot (K \cdot L)$
- 2 $(K \cdot J) \supset [M \vee (N \vee O)]$
- 3 $\sim M \cdot (\sim P \cdot \sim O) \quad / \therefore N$
- 4 $(J \cdot K) \cdot L$ _____
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- 6 $K \cdot J$ _____
- 7 $M \vee (N \vee O)$ _____
- 8 $\sim M$ _____
- 9 $N \vee O$ _____
- 10 $O \vee N$ _____
- 11 $(\sim M \cdot \sim P) \cdot \sim O$ _____
- 12 $\sim O \cdot (\sim M \cdot \sim P)$ _____
- 13 $\sim O$ _____
- 14 N _____

5 Write notes : (any **two**)

14

- (1) Paradox of Material Implication.
- (2) Prove with the law of C.P. :

1 $(A \vee B) \supset (C \cdot D)$

2 $(D \vee E) \supset F \quad / \therefore A \vee F$

(3) Explain with example two way law of De.M.

(4) Prove with the law of I.P. :

$$1 \quad A \supset (B \cdot C)$$

$$2 \quad (B \vee D) \supset E$$

$$3 \quad D \vee A \quad / \therefore E$$
