

B.A. (Honours) Examination, 2015

Semester – IV

Philosophy

Paper : H-7

Western Logic (Part-I)

Time: 3 Hours

Full Marks: 40

Questions are of equal value.

Answer **any four** questions.

1. (a) Represent the following statement in a Venn-Diagram. 2
Some scientists are not philosophers.
- (b) Test the validity of the following syllogistic forms by means of Venn-Diagrams (**any two**): 4×2=8
 - (i) I A I - 3
 - (ii) E I O - 1
 - (iii) Some P is M. No M is S. Therefore, some S is not P.
2. (a) Why is it advised that one should represent the universal premise first and represent the particular premise next while testing a syllogism by means of Venn-Diagram? 4
- (b) Determine the validity of the following by means of Venn-Diagrams: 3×2=6
 - (i) As All P is M, All S is P, since All M is S.
 - (ii) Some S is P, because some M is S and All P is M.
3. (a) Why is the empty set subset of every set? 4
- (b) State whether the following conditional statements are true for any sets A, B and C. Give reasons for your answer (**any two**): 3×2=6
 - (i) If $A \subseteq B$ and $B \subseteq C$ then $A \subseteq C$.
 - (ii) If $A \in B$ and $B \in C$ then $A \in C$.
 - (iii) $A \subset B$ and $B \not\subseteq C$ then $A \not\subset C$.
4. (a) If A is any set what are $A \sim A$ and $A \cup \sim A$? 2
- (b) Let $V = \{1, 2, 3, 4, 5\}$, $A = \{1, 2\}$, $B = \{3, 4\}$, $C = \{1, 3, 5\}$. What are the following (**any two**): 4×2=8
 - (i) $(A \cup B) \sim (A \cap \sim C)$
 - (ii) $(\sim A \cup \sim B) \cap \sim C$
 - (iii) $(A \sim C) \cup \sim B$

P.T.O.

(2)

5. (a) How do you calculate the probability of a negative statement? 2
- (b) What is the probability of getting three tails consecutively in three successive tosses of a coin? 3
- (c) What is the probability of getting a red card from three successive draws of cards from a pack of cards if (a) the drawn cards are replaced before the next draw, (b) the drawn cards are not replaced before the next draw? 5
6. Write short notes on *any two* of the following: $5 \times 2 = 10$
- (a) Existential Import of a categorical proposition
- (b) The empty set
- (c) Probability of dependent events (in the context of joint events)
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