

B.A. (Honours) Examination, 2018

Semester-IV

Philosophy

Course- H-7 (Core)

Western Logic (Part-I)

Time-3 Hours

Full Marks-40

Questions are of value as indicated in the margin.

Answer **any four** questions

1. (a) Show that every set is a subset of itself. 4
(b) State whether the following statements are true for all sets A, B and C. Give reasons for your answer. 3×2
 - (i) If $A \subseteq B$ and $B \subset C$ then $A \subset C$.
 - (ii) $A \not\subseteq B$ and $B \not\subseteq C$ then $A \not\subseteq C$.
 - (iii) If $A = B$ and $B \in C$ then $A \in C$.
2. (a) How is the following statement represented in Boolean notation? 2
There are no fairies.
(b) Determine the validity of the following by means of Venn Diagrams. 2×4
 - (i) Some A is not B, since no A is D and some D are B.
 - (ii) If all X are Z, then some Z are not Y, as some Y are not X.
3. (a) What is the formula for obtaining the probability of joint occurrence of events? 2
(b) (i) What is the probability of getting three points by rolling three dice simultaneously? 4
(ii) What is the probability of getting two aces from a deck of cards by drawing one card each in two successive drawings, if the cards drawn are not replaced in the deck before the next draw? 4
4. (a) What is the empty set? 1
(b) Show that the empty set is a subset of every set. 3
(c) Let $V = \{1, \{1, \{1\}\}\}$, $A = \{1\}$, $B = \{\{1, \{1\}\}\}$.
What are the following? 3×2
 - (i) $\sim A$ (ii) $A \cup \sim B$ (iii) $\sim(A \sim B)$
5. (a) Find the following: 1×4
 - (i) $\wedge \sim \wedge$ (ii) $\{\wedge, \{\wedge\}, \{\{\wedge\}\}\} \sim \{\{\{\wedge\}\}\}$ (iii) $(\{\wedge\} \cup \wedge) \sim \{\wedge\}$
 - (iv) $\{\wedge, \{\wedge\}, \{\{\wedge\}\}\} \cup \{\{\wedge, \{\wedge\}\}\}$
- (b) Are the following forms of syllogism valid? Answer by using Venn Diagrams. 3×2
 - (i) EAO - 4 (ii) IAI - 2
6. Explain, after Copi, the two alternative conceptions of probability. 10