# B.A. (Honours) Examination, 2017
## Semester-IV
## Philosophy
## Course – H-7
## Western Logic (Part-I)

**Time: 3 Hours** **Full Marks: 40**

*Questions are of value as indicated in the margin.*

Answer ***any four*** questions from the following.

1. a) Prove that every set is a subset of itself. 4
   b) What is the difference between a subset and a proper subset? 2
   c) Which of the following statements are true, for all sets A, B and C. Give reason for your answer. (***any two***) 2×2=4
      i) $A \notin B \;\&\; B \in C \rightarrow A \notin C$ ii) $A \subseteq B \;\&\; B \in C \rightarrow A \notin C$
      iii) $A \subset B \;\&\; B \subset C \rightarrow C \not\subset A$
2. a) Why is it advised that one should represent the universal proposition before representing the particular proposition while testing syllogism by means of Venn diagrams? 2
   b) Determine the validity of the following by means of Venn diagrams (***any two***) 4×2=8
      i) Some snakes are not dangerous animals, but all snakes are reptiles, therefore some dangerous animals are not reptiles.
      ii) No tragic actors are idiots. Some comedians are not idiots. Therefore, some comedians are not tragic actors.
      iii) Some parrots are not pests. All parrots are pets. Therefore, no pets are pests.
3. a) Explain, after Copi, the two alternative conceptions of probability. 5
   b) What is the probability of getting twelve points by rolling two dice simultaneously? 2
   c) What is the probability of getting two spades from a deck of cards by two successive dreaws of cards, if the card drawn is not replaced before the second draw? 3
4. a) Define the empty set. 2
   b) Prove that empty set is a subset of every set. 4
   c) Let V = {1,2,3,4,5,6,7,8}, A = {1,2,3,4}
      B = {2,4,6,7}, C= {1,4,5,8}, D = {2,5,6,8} 3×2=6
      Find (***any two***)
      i) $-(A \cap B)$ ii) $(A \cap D)-(-B)$ iii) $A-(-C \cup D)$
5. a) What is the relation between truth and validity? Explain. 4
   b) Give the definition of inference. 2
   c) What do you mean by 'existential import' of a categorical proposition? Explain. 4
6. a) Write a short note on the 'laws of thought'. 4
   b) Test the validity of the following syllogistic forms by means of Venn diagrams (***any two***) 3×2=6
      (i) EEE-1 (ii) OAA-3 (iii) IEO-4

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