'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.A. Sec 2nd Semester Examination, 2024

UPHISEC12002-PHILOSOPHY

REASONING AND LOGICAL THINKING

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.

SECTION-I

1.   Answer any *five* questions from the following: 2×5 = 10

(a) Define set.   2

(b) If $A = B$ and $B = C$, then $A = C$. — (True/False)   2

(c) If $A = \{1, 2, 3\}$ 2

$\quad\quad B = \{2, 3, 4\}$

$\quad\quad C = \{4, 5\}$

then find the following:
$(A \cap B) \cap C$

(d) Empty set is the sub-set of any set — (True/False)   2

(e) What are the Laws of thought?   2

(f) What is informal fallacy?   2

(g) Draw a Venn-diagram representing $A \cap B \neq \wedge$ 2

(h) Find the following: 2
$\{\wedge, \{\wedge\}\} \sim \{\wedge\}$

SECTION-II

2.   Answer any *two* questions from the following: 5×2 = 10

(a) What are the basic characteristics of set?   5

(b) Let: $V = \{1, 2, 3, 4\}$ $2\frac{1}{2}+2\frac{1}{2}$

$\quad\quad A = \{1, 3\}$

$\quad\quad B = \{2, 4\}$

Find the following:

(i) $\sim (A \cup B)$

(ii) $V \sim (A \cup B)$

(c) Symbolize the following with the help of set theoretical elements: $2\frac{1}{2}+2\frac{1}{2}$
(i) All Philosophers who are educated and wise.
(ii) Some men who take coffee, milk and tea also take wine and tobacco.

(d) Write a note on Fallacy of Ambiguity. 5

OR

Are the following assumptions mutually consistent? 5

$C \neq \wedge$

$A \cap B \neq \wedge$

$A \cap B = \wedge$

SECTION-III

Answer any *two* questions from the following $10 \times 2 = 20$

3. Test the validity of the following arguments by Venn-diagram: 5+5

(i) All Philosophers are wise, some scientists are not wise. So, some scientists are not Philosopher.

(ii) $W \cap \sim P = \wedge$

$W \cap \sim L \neq \wedge$

$\therefore L \cap \sim P \neq \wedge$

4. (i) What is an empty set? 1

(ii) How many empty sets we can assume in the world? 1

(iii) What are the grounds for admitting empty set? 3

(iv) Prove that empty set is the sub-set of empty set. 5

5. (a) Explain the basic concept of set. 6

(b) Which of the following statements are true (for all sets A, B and C)? 2+2

(i) If $A \subseteq B$ and $B \subseteq C$, then $A \subset C$.

(ii) If $A \in B$ and $B = C$, then $A \in C$.

6. Explain, in brief, the three fundamental Laws of thought. 10

OR

What is fallacy of relevance? Explain its different forms. 2+8

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