

COOCH BEHAR PANCHANAN BARMA UNIVERSITY

B.A. Honours 5th Semester Examinations, 2022 Under Old and New Syllabus

PHILOSOPHY

WESTERN LOGIC-II

CORE-12

Time Allotted: 2 Hours
Full Marks: 40

The figures in the margin indicate full marks.

| 1. | | Answer any one question from the following: | $15 \times 1 = 15$ |
|----|-----|---|--------------------|
| | | Explain Mill's method of concomitant variation. In what sense is this important as the first qualitative method of inductive inference? | 10+5 |
| | (b) | (i) What is normal form? What are the differences between C.N.F. and D.N.F.? | 2+3 |
| | | (ii) Transform the following into C.N.F.: | 5 |
| | 5- | $[(p \supset q) \cdot q] \supset p$ | |
| | | (iii) Transform the following into D.N.F.: | 5 |
| | | $(p \supset q) \cdot (p \cdot \sim q)$ | |
| | (c) | (i) What is the advantage of Sheffer's stroke function? | 5 |
| | | (ii) Transform the following statements into Sheffer's stroke function: | $5 \times 2 = 10$ |
| | | $(p \supset q) \lor (q \supset p)$ | |
| | | $(\sim p \cdot q) \supset (p \vee q)$ | |
| 2. | | Answer any <i>one</i> question from the following: | $10 \times 1 = 10$ |
| | (a) | Distinguish between scientific and unscientific explanation. | 10 |
| | (b) | Construct the formal proof of validity of the following arguments: | $5 \times 2 = 10$ |
| | | (i) $(x) (Vx \supset Wx)$ | |
| | | $(x) (Wx \supset \sim Xx)$ | |
| | | $\therefore (x) (Xx \supset \sim Vx)$ | |

(ii) All mountaineers are neighborly. Some outlaws are mountaineers. Therefore

some outlaws are neighborly. (Mx, Nx, Ox)

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3. Answer any one question from the following:

 $5 \times 1 = 5$

(a) Write a note on Ad Hoc Hypothesis.

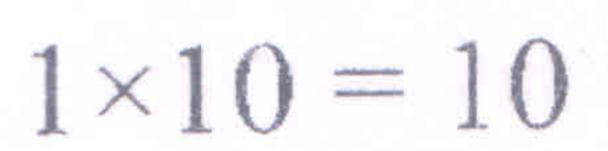
5

(b) Prove the invalidity of the following:

5

$$(\exists x) (Jx \cdot Kx)$$

- $(\exists x) (Kx \cdot Lx)$
- $\therefore (\exists x) (Lx \cdot Jx)$
- 4. Answer any ten questions from the following:



- (a) What is meant by hypothesis?
- (b) Transform the following into statement:

- (c) What is meant by a posteriori theory of Probability?
- (d) What is simple predicate?
- (e) Give a concrete example of the method of agreement.
- (f) What do you mean by crucial experiment?
- (g) Give a symbolic definition of the method of residues.
- (h) Is formal proof of validity a decision procedure?
- (i) Translate the following by using quantifiers:

Diplomats are not always rich (Dx, Rx)

- (j) What do you mean by bound variable?
- (k) What is meant by the term 'quantifier'?
- (1) What do you mean by 'individual constant'?
- (m) Translate the sentence by predicate logic:

Socrates is human.