STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 86
(For candidates admitted from the academic year 2008 – 2009 & thereafter)

SUBJECT CODE: SC/ME/LS64

B.A. DEGREE EXAMINATION, APRIL 2012
BRANCH III – SOCIOLOGY
SIXTH SEMESTER

COURSE : MAJOR – ELECTIVE
PAPER : LOGIC AND SCIENTIFIC METHODS
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS. EACH ANSWER NOT TO EXCEED 50 WORDS: (10 X 2 = 20)

1. Define Logic.
2. Differentiate Proposition from Sentences.
3. What is a Dilemma?
4. State any two fallacies.
5. Define Proposition.
6. Give truth table for Disjunctive propositions.
7. Write the algebraic function of OR gate.
8. Draw a simple AND switching circuit.
9. Identify the missing number within the series

	A	B	C	D	E
33, ?, 19, 12, 5	31	26	29	27	24

10. Arrange the words given below in a meaningful sequence

1. Police	2. Punishment	3. Crime	4. Judge	5. Judgement

SECTION – B

ANSWER ANY FIVE QUESTIONS. EACH ANSWER NOT TO EXCEED 300 WORDS: (5 X 8 = 40)

11. How Aristotle classified propositions.
12. State the rules of Syllogism
13. Explain the Valid moods of First Figure.
14. Write note on Basic Truth Tables for all the connectives.
15. Briefly explain the Laws of Commutation.
16. What is a Gate? Explain the basic gates of Digital Logic.

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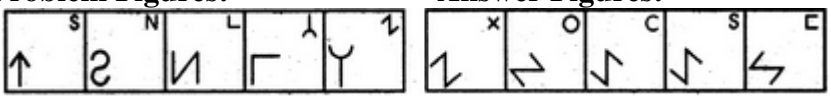
17. Given A,B,J True and C,S False. Apply Direct Truth Table method and check the validity of the following expressions.
    a) **{ [(A ⊃ B) • (B ⊃ C)] ⊃ [(A ⊃ C)] }**
    b) **{ [(J ⊃ S) • (~J ⊃ ~S)] ⊃ [(J ⊃ ~S)] }**

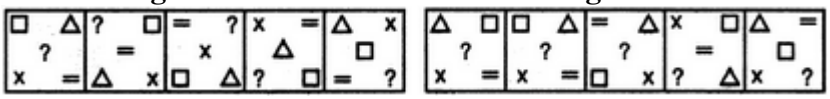
18. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.

Problem Figures: **Answer Figures:**



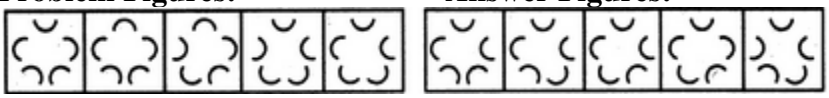
(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

Problem Figures: **Answer Figures:**



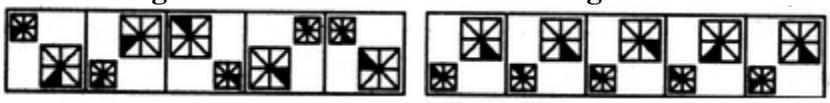
(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

Problem Figures: **Answer Figures:**



(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

Problem Figures: **Answer Figures:**



(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

SECTION – C

ANSWER ANY TWO QUESTIONS. EACH ANSWER NOT TO EXCEED 1200 WORDS: (2 X 20 = 40)

19. Explain the Nature and Scope of Logic.
20. How modern Logician classified Propositions
21. Apply direct truth table method for the following expression and check their validity.
    a) **{(P ⊃ Q) ⊃ [(P + Q) V (~P + ~Q)] }**
    b) **{ [(E + B) ⊃ ~G] ⊃ [G ⊃ ~(E + B)] }**

22. Explain the graphical symbol, algebraic structure and basic truth table of logic gates.

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