6. Consider the following set of propositions :

(i) Patient has spots.

(ii) Patient has measles.

(iii) Patient has high fever.

(iv) Patient has Rocky Mountain spotted fever.

(v) Patient has previously been inoculated against measles.

(vi) Patient was recently bitten by a tick.

(vi) Patient has an allergy.

(a) Create a network that defines the casual connections among these nodes. **5**

(b) Define Bayesian Network. **5**

(c) Make it a Bayesian network by constructing the necessary conditional probability Matrix. **5**

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DD-684

M.C.A. EXAMINATION, Dec. 2017

(Fourth Semester)

(B. Scheme) (Re-appear Only)

(MCA)

MCA-508

ARTIFICIAL INTELLIGENCE

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Explain the main features of artificially intelligent systems. **5**

(b) Differentiate between Depth First Search and Breadth First Search. **10**

2. Explain Min Max algorithm and apply the same to tic-tac-toe game. **15**

Unit II

3. Write and explain the steps involved in unification algorithm ? Why is unification required and what is its importance ? **15**

4. Assume the following facts :

(i) Steve only likes easy courses

(ii) Science courses are hard

(iii) All the courses in the basket weaving department are easy

(iv) EC301 is a basket weaving course.

(a) Translate these sentences into formulas in predicate logic. **4**

(b) Convert the formulas of part a into clause form. **4**

(c) Prove that "Steve does not like Science courses" using backward chaining. **3**

(d) Prove that "What course would Steve like ?" using resolution. **4**

Unit III

5. (a) Explain the theory of uncertainty based on Fuzzy logic. **6**

(b) Define fuzzy sets that can be used to represent the prepositions given below : **3×3**

(i) John is very tall

(ii) Most Chinese are not very tall

(iii) Mary is slightly ill.

Unit IV

7. Consider the sentences : **15**

(a) "I have deposited Rs. 5000 in the bank"

(b) "I am going on the river bank."

Explain, how is the ambiguity of word 'bank' given in above two different sentences resolved using Natural Language Processing ?

8. Write short notes on the following :

(a) Rote Learning **7½**

(b) Representation for planning. **7½**

Unit IV

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