# FACULTY OF INFORMATICS
### B.E.  3/4  (IT)  II – Semester  (Supplementary) Examination,  January 2015

## Subject : Artificial Intelligence

**Time: 3 hours**                                                      **Max. Marks: 75**

**Note:  Answer all questions from Part - A. Answer any FIVE questions from Part - B.**
**PART – A**  (25 Marks)

| | | |
|---|---|---|
| 1 | What is artificial intelligence? | 2 |
| 2 | Define alpha cutoff and beta cutoff. | 2 |
| 3 | Write the rules of inference for proportional logo. | 2 |
| 4 | Draw the expert system architecture. | 3 |
| 5 | State Bayes theorem. | 3 |
| 6 | Sketch and compare state-space versus plan-space search. | 3 |
| 7 | What is perception? | 2 |
| 8 | Show how Boolean function can Lean than as a decision tree. | 3 |
| 9 | What is speech act?  Give an example. | 2 |
| 10 | Write a short note phrase structure grammar. | 3 |

## PART – B  (5 x 10 = 50 Marks)

11  Describe the behaviour of A* search in terms of optimality, completeness and complexity.                                                                        10

12  a)  Explain Resolution algorithm in predicate logic.                              6
    b)  Explain Alpha-Beta pruning.                                                   4

13  a)  Explain how predicate calculus can be used as language for representing knowledge.   5
    b)  Write the steps of resolution regulation's for proving an arbitary wff from asset of wff's.   5

14  Write decision tree learning algorithm.  Explain its working using an example.        10

15  Explain an expert system bunging out the role of knowledge engineer.                10

16  a)  Explain semantic analysis in natural language processing.                       5
    b)  What are semantic nets?  Explain.                                             5

17  Write back propagation algorithm explain its working.                              10

******