Paper Code: BCA 312	**L**	**T**	**C**
Paper Id: 20312	**3**	**1**	**4**

Paper: Artificial Intelligence

Aim: To understand the concept of Artificial Intelligence, Knowledge Representation, Logic, NLP and Learning.

INSTRUCTIONS TO PAPER SETTERS: **Maximum Marks: 75**

1. Question No. 1 should be compulsory and cover the entire syllabus. This question should have objective or short answer type questions. It should be of 25 marks.
2. Apart from Question No. 1, rest of the paper shall consist of four units as per the syllabus. Every unit should have two questions. However, student may be asked to attempt only 1 question from each unit. Each question should be 12.5 marks.

UNIT - I

Overview of A.I: Introduction to AI, Importance of AI, AI and its related field, AI techniques, Criteria for success.

Problems, problem space and search: Defining the problem as a state space search, Production system and its characteristics, Issues in the design of the search problem.

Heuristic search techniques: Generate and test, hill climbing, best first search technique, problem reduction, constraint satisfaction. **[No. of Hrs.: 11]**

UNIT - II

Knowledge representation: Definition and importance of knowledge, Knowledge representation, various approaches used in knowledge representation, Issues in knowledge representation.

Using Predicate Logic: Represent ting Simple Facts in logic, Representing instances and is-a relationship, Computable function and predicate. **[No. of Hrs.: 12]**

UNIT - III

Natural language processing: Introduction syntactic processing, Semantic processing, Discourse and pragmatic processing.

Learning: Introduction learning, Rote learning, Learning by taking advice, learning in problem solving, Learning from example-induction, Explanation based learning.

[No. of Hrs.: 11]

UNIT - IV

Expert System: Introduction, Representing using domain specific knowledge, Expert system shells. LISP and other AI Programming Language **[No. of Hrs.: 10]**

TEXTBOOKS:

[T1] E. Rich and K. Knight, "Artificial intelligence", TMH, 2nd ed., 1999.