

**SARDAR PATEL UNIVERSITY**  
**Programme & Subject: M.Sc – (CA & IT) Semester: II**  
**Syllabus with Effect from: June-2019**

<b>Paper Code: PS02CIIT33</b>	<b>Total Credit: 4</b>
<b>Title Of Paper: Artificial Intelligence</b>	

Unit	Description in Detail	Weightage (%)
I	<p><b>Artificial Intelligence and Knowledge-Based Systems</b>            Natural and Artificial Intelligence – Characteristics and Definitions of AI            AI based systems, Testing the Intelligence with Turing Test, and Chinese Room            Experiment, Application Areas of Artificial Intelligence, Data Pyramid and            Computer Based Systems            Production Systems and AI based Searches like Hill Climbing and Heuristic            Search            Introduction &amp; Objectives of KBS, Components of KBS            Categories of the KBS like Expert Systems, Database Management Systems in            Conjunction with an Intelligent User Interface, Linked Systems, CASE Based            Systems, Intelligent Tutoring Systems, etc.            Issues and limitations of KBS            General structure of KBS, Conflict Resolution Strategies for Rule Based            Systems            Knowledge Base Shell            Advantages, limitations and applications of Knowledge-Based Systems</p>	25%
II	<p><b>Development of Knowledge-Based Systems</b>            Development of Knowledge-Based System, Difficulties in            KBS Development            Knowledge-Based Systems Development Model, Knowledge Acquisition            Process and Techniques, Knowledge Sharing, Dealing with Multiple Experts,            Issues in Knowledge Acquisition, Knowledge Update            Characteristics of Good Knowledge Representation Scheme            Factual and Procedural Knowledge Representation Applications and Users of            KBS            Tools for KBS development and Case Studies</p>	25%
III	<p><b>Fuzzy Logic and Neural Network</b>            Introduction to fuzzy logic            Fuzzy logic and fuzzy sets, Membership Functions, Fuzzification and            Defuzzification, Operations on Fuzzy Sets            Fuzzy Functions and Linguistic Variables            Fuzzy Relationships, Propositions and Connectives            Fuzzy Inference            Fuzzy Rules, Fuzzy Control System and Fuzzy Rule Based Systems            Neural Networks: Introduction, Advantages and Disadvantages of Neural            Networks            Biological Neuron and Artificial            Neuron Neural Network Architectures            Applications of Neural Network</p>	25%
IV	<p><b>Genetic Algorithms</b>            Introduction to Genetic Algorithms</p>	25%



	Basic Terminology, Genetic Algorithms, GA Cycle Basic Operators of Genetic Algorithms Function Optimization, Edge Recombination Schema	
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**Basic Text & Reference Books:-**

- Elain Rich: “Artificial Intelligence”, McGraw Hill, Third Edition, 2001.
- R. Akerkar: “Introduction to Artificial Intelligence”, Prentice Hall of India, 2005.
- R. Akerkar and P. S. Sajja: “Knowledge-Based Systems”, Jones and Bartlett, MIT, 2010.

