

**University of Mumbai**

Program: Computer Engineering

Curriculum Scheme: Rev2016

Examination: BE Semester: VII

Course Code: CSC703 and Course Name: Artificial Intelligence & Soft Computing

Time: 2hour 30 minutes

Max. Marks: 80

**Q1. Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	B
Q2.	C
Q3.	A
Q4	C
Q5	B

Q6	D
Q7	C
Q8.	A
Q9.	D
Q10.	C

Q2	Solve any Two Questions out of Three 10 marks each
A	Describe each component in architecture of Expert System? What are the limitations of Expert system? Definition 1marks Diagram 3 Marks Explain all components 3 Marks Limitation 3Marks
B	Explain A* algorithm with example.  Algorithm 5Marks Example 5 Marks

C	<p>What is supervised and unsupervised learning? Explain multilayer feed forward network.</p> <p>Explain Supervised and Unsupervised learning 5Marks Multilayer feed forward diagram 3 marks and explanation 2 marks</p>
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<b>Q3</b>	<b>Solve any Two Questions out of Three 10 marks each</b>
A	<p>Design Mc-cullohs Pitt's model for XOR gate.</p> <p>Definition 1 Marks XOR table 1 Marks Proof XOR function with MP neuron 8Marks</p>
B	<p>Draw and describe the architecture of utility based agent in detail. How it is different than Goal based agent.</p> <p>Diagram and explain utility based agent 5Marks Diagram and explain Goal based agent 5 Marks</p>
C	<p>Explain Genetic Algorithm.</p> <p>Definition 1 Mark Flow of genetic algorithm 1 Mark Explain every block 5marks Application 1 Mark Advantage 1Mark Limitation 1 Mark</p>

<b>Q4</b>	<b>Solve any Two Questions out of Three 10 marks each</b>
A	<p>Explain steps involved in converting the First order logic statement into CNF with a suitable example.</p> <p>Eliminate implication Move Negation Standardize Variable Eliminate existential instantiation quantifier</p>

	Drop Universal quantifier Explain all these techniques with example.2 marks each.
B	Explain Partial order planning. Definition 1 Mark Algorithm 4 Marks Explanation 5 marks
C	Explain Back propagation algorithm.  Introduction 1 Mark Algorithm 4 marks Explanation with diagram 5 Marks