

**K. J. Somaiya Institute of Engineering and Information Technology, Sion, Mumbai-22**  
**(Autonomous College Affiliated to University of Mumbai)**

Subject Code: AIC501

Subject Name: Artificial Intelligence

Date: 30/11/2022

Nov - Dec 2022 (B.Tech.) Program: Artificial Intelligence & Data Science Examination: TY Semester: V Course Code: AIC501 and Course Name: Artificial Intelligence				
Duration: 2.5 Hours			Max. Marks: 60	
Instructions: (1) All questions are compulsory. (2) Draw neat diagrams wherever applicable. (3) Assume suitable data, if necessary.				
		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight.	12		
i)	What is PEAS?	2	CO1	U
ii)	List the criteria to measure the performance of different search strategies.	2	CO3	R
iii)	What is planning with partial order planning.	2	CO5	U
iv)	List the steps involved in simple problem solving agent.	2	CO2	R
v)	Compare between DFS and BFS.	2	CO3	AN
vi)	List four applications of AI in Retail.	2	CO6	R
vii)	Draw truth table of $\neg (p \wedge \neg q)$ .	2	CO4	Ap
viii)	Discuss about heuristic function?	2	CO3	U
Q.2	Solve any four questions out of six.	16		
i)	Explain Model-Based agent with block diagram.	4	CO2	U
ii)	Explain about tautologies and contradictions with example.	4	CO4	U
iii)	Discuss in detail about applications of AI in Healthcare.	4	CO6	U
iv)	Explain about Inductive reasoning and Deductive reasoning.	4	CO1	U
v)	Discuss about IDDFS example.	4	CO3	U
vi)	Compare supervised and unsupervised learning.	4	CO5	AN
Q.3	Solve any two questions out of three.	16		
i)	Discuss in detail about Turing Test designed for satisfactory operational definitions of AI.	8	CO1	U

ii)	Apply A* search algorithm for 8-Puzzle Problem.  <b>Start State</b> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>3</td><td>7</td><td>6</td></tr> <tr><td>5</td><td>1</td><td>2</td></tr> <tr><td>4</td><td></td><td>8</td></tr> </table> <b>Goal State</b> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>5</td><td>3</td><td>6</td></tr> <tr><td>7</td><td></td><td>2</td></tr> <tr><td>4</td><td>1</td><td>8</td></tr> </table>	3	7	6	5	1	2	4		8	5	3	6	7		2	4	1	8	8	CO3	Ap
3	7	6																				
5	1	2																				
4		8																				
5	3	6																				
7		2																				
4	1	8																				
iii)	Explain the working of reinforcement learning with example.	8	CO5	U																		
Q.4	Solve any two questions out of three.	16																				
i)	Differentiate between Goal based agent and model based agent.	8	CO2	AN																		
ii)	Explain about different inference rules of First order logic	8	CO4	U																		
iii)	Discuss in detail about application of AI in machine translation.	8	CO6	U																		

\*\*\*\*\*