

Scheme	R2016
Semester	7
Course Code	CSC703
Course Name	Artificial Intelligence and Soft Computing

Question No.	Question	Option-1	Option-2	Option-3	Option-4
1	An agent is composed of	Architecture	Agent Function	Perception Sequence	Architecture and Program
2	The “Turing Test” is ...	a test devised by Alan Turing to determine whether a secret code is breakable	a test to determine whether a Turing Machine will halt	a test of whether a machine is intelligent prescribed by Turing	testing the accuracy of a program
3	Which environment is called as semi dynamic?	Environment does not change with the passage of time	Agent performance changes	Environment will be changed	Agent performance does not change
4	Web crawler is a	Intelligent goal-based agent	Problem-Solving agent	Simple reflex agent	Model based agent
5	What is key advantage of local search algorithms?	Less memory	More time	Less memory & Finds a solution in large infinite space	Finds a solution in large infinite space
6	Which of the following are the drawbacks of Hill Climbing?	Hill Climbing is not an informed search algorithm	It is not complicated	The search may get stuck at a local optimum	Hill Climbing requires an exponential amount of memory
7	The space complexity of _____ is better than _____.	BFS, DFS	DFS, BFS	BFS, Depth Limited Search	BFS, IDDFS
8	What is the space complexity of Depth-first search with branching factor b and maximum depth m	O(b)	O(bl)	O(m)	O(bm)
9	Which form is called as a conjunction of disjunction of literals?	Conjunctive normal form	Disjunctive normal form	Normal form	First normal form
10	Which of the following is the correct definition of “an aunt” in FOL? Here, Aunt(x,y) is read as x is an aunt of y and Sister(x,y) is read as x is a sister of y.	$\forall x \forall y (Aunt(x,y) \rightarrow \forall z (Sister(z, x) \vee Parent(z, y)))$	$\forall x \forall y (Aunt(x,y) \rightarrow \exists z (Sister(z,x) \wedge Parent(z,y)))$	$\forall x \forall y (Aunt(x,y) \rightarrow \exists z (Sister(x,z) \wedge Parent(z,y)))$	$\forall x \forall y (Aunt(x,y) \rightarrow \exists z (Sister(x,z) \rightarrow Parent(z,y)))$

11	$\alpha \rightarrow \beta$ is FALSE only when α is and β is	TRUE, TRUE	FALSE, TRUE	TRUE, FALSE	FALSE, FALSE
12	What are you predicting by : $\forall x$ mushroom(x) \wedge violet(x) \rightarrow poisonous(x) ?	There is a violet mushroom, which is poisonous	All mushrooms are poisonous	All violet mushrooms are poisonous	Violet mushrooms are not poisonous
13	Which of the following sentences represent “No politician is honest”?	$\exists x (\neg(\text{politician}(x)) \rightarrow \neg(\text{honest}(x)))$	$\forall x (\text{politician}(x) \wedge \neg(\text{honest}(x)))$	$\forall x (\text{politician}(x) \rightarrow \neg(\text{honest}(x)))$	$\exists x (\text{honest}(x) \rightarrow \neg(\text{politician}(x)))$
14	Fuzzy controllers are built on the basis of	Fuzzy Extension principle	Membership function	Fuzzy Inference Systems	Fuzzy variables
15	Consider a fuzzy set A defined on the interval $X = [0, 10]$ of integers by the membership function $\mu_A(x) = x / (x+2)$ Then the α cut corresponding to $\alpha = 0.5$ will be	{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10}	{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}	{2, 3, 4, 5, 6, 7, 8, 9, 10}	{0,0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
16	Give the height $h(A)$ of a fuzzy set A where $\mu_A(x) = \{0.2, 0.5, 0.6, 0.1, 0.9\}$	0.5	0.1	1	0.9
17	Fuzzification Inference Unit converts input intoset	Crisp, Fuzzy	Fuzzy, Crisp	Crisp, Crisp	Fuzzy,Fuzzy
18	_____ fuzzy membership function is defined by a lower limit 'a', an upper limit 'b', and a value 'm', where $a < m < b$	Trapezoidal	Triangular	Sigmoidal	Increasing
19	What is back propagation?	It is another name given to the curvy function in the perceptron	It is the transmission of error back through the network to adjust the inputs	It is the transmission of error back through the network to allow weights to be adjusted so that the network can learn	to develop learning algorithm for single layer feedforward neural network
20	What is TRUE for linear activation functions.	Weights and biases of neural network with linear activation function will not get updated during backpropagation.	The network with linear activation function will not be able to learn complex patterns in data.	They can be used only for binary classifier	The derivative of linear activation function is zero.

21	Suppose you are designing a handwritten digit recognition system using MLP. Dataset contains 28*28 pixel images of handwritten digits from 0-9. Choose the correct number of neuron for input and output layer.	Input layer:100 neurons and Output layer:9 neuron.	Input layer:100 neurons and Output layer:100 neuron	Input layer:10 neurons and Output layer:2 neuron	Input layer:784 neurons and Output layer:10 neuron
22	Classification and Regression are the examples oflearning	Supervised	Unsupervised	dependent	Specialized
23	During learning, if a Perceptron misclassifies a training data positively, i.e., erroneously yields an output +1 instead of -1, the interconnection weights are	Increased	Decreased	Kept unaltered	make it zero
24	How many layers are there in adaptive neuro-fuzzy inference systems (ANFIS) ?	3	5	7	4
25	The inference engine is.....	A method of organizing expert system knowledge into chunks.	The programming environment of an expert system.	A strategy used to search through the rule base in an expert system.	A strategy for searching the rule base in an expert system that begins with information entered by the user