Program: **Information Technology**
Curriculum Scheme: Rev-2012

Examination: SE Semester - VII

Course Code: ITC703   Course Name: Intelligent Systems
Time: 2 hour   Max. Marks: 80

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Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks 2 marks each
1.	What is the rule of simple reflex agent?
Option A:	Simple-action rule
Option B:	Condition-action rule
Option C:	Simple & Condition-action rule
Option D:	None of the mentioned
2.	Which agent deals with happy and unhappy states?
Option A:	Simple reflex agent
Option B:	Model based agent
Option C:	Learning agent
Option D:	Utility based agent
3.	What is State Space?
Option A:	The Whole Problem
Option B:	Your Definition to a Problem
Option C:	Representing your Problem with Variable and Parameter
Option D:	A space where you know the solution
4.	Complete history of Environment that agent has perceived is called _____.
Option A:	Percept Sequence
Option B:	Agent Function
Option C:	Agent Program
Option D:	Agent Architecture
5.	An Agent is composed of _____.
Option A:	Agent Function
Option B:	Agent Program
Option C:	Architecture and Program
Option D:	Agent Architecture
6.	Which Element in Learning Agent is responsible for sensing environment and define a performance standard.
Option A:	Learning Element
Option B:	Performance Element
Option C:	Critic Element
Option D:	Problem Generator

7.	Which Element in Learning Agent is responsible for suggesting actions that will lead to provide better solution.
Option A:	Learning Element
Option B:	Performance Element
Option C:	Critic Element
Option D:	Problem Generator

8.	The famous spare tire problem or Scheduling classes for bunch of students or Air cargo transport are the best example of
Option A:	Planning Problem
Option B:	Partial Order Planning
Option C:	Hierarchical Planning
Option D:	None of the above.

9.	There exist only two types of quantifiers, Universal Quantification and _____ Quantification.
Option A:	Existent
Option B:	Existential
Option C:	Exceptional
Option D:	Expectional

10.	What are you predicating by the logic: $\forall$x: $\exists$y: loyalto(x, y).
Option A:	Everyone is loyal to someone
Option B:	Everyone is loyal to all
Option C:	Everyone is not loyal to someone
Option D:	Everyone is loyal

11.	Uncertainty arises in the wumpus world because the agent's sensors give only _____
Option A:	Full and Global Information
Option B:	Partial and Global Information
Option C:	Partial and Local Information
Option D:	Full and Local Information

12.	Heuristic function h(n) is _____
Option A:	Lowest path cost
Option B:	Cheapest path from root to goal node
Option C:	Estimated cost of cheapest path from root to goal node
Option D:	Average path cost

13.	From which rule does the modus ponens are derived?
Option A:	Inference Rule
Option B:	Module Rule
Option C:	Both Inference and Module Rule
Option D:	Alpha and Beta Rule

14.	What is State Space?
Option A:	The Whole Problem
Option B:	Your Definition to a Problem
Option C:	Representing your Problem with Variable and Parameter
Option D:	A space where you know the solution

15.	What is the rule of simple reflex agent?
Option A:	Simple Rule
Option B:	Condition Action Rule
Option C:	Condition Rule
Option D:	Action Rule

16.	Which is used to provide the feedback to the learning element?
Option A:	Critic
Option B:	Problem Generator
Option C:	Learning Element
Option D:	Performance Element

17.	Which is the best way to go for Game playing problem?
Option A:	Linear Approach
Option B:	Heuristic Approach
Option C:	Random Approach
Option D:	Optimal Approach

18.	Forward State Space Search is also called as _____
Option A:	Regression Planning
Option B:	Progression Planning
Option C:	Partial Order Planning
Option D:	Hierarchical Planning

19.	Which search strategy is also called as blind search?
Option A:	Informed Search
Option B:	Uninformed Search
Option C:	Both of the above
Option D:	None of the above

20.	A* algorithm is based on _____
Option A:	Breadth First Search
Option B:	Depth First Search
Option C:	Hill Climbing Search
Option D:	Best First Search

Q2	Solve any Four out of Six 5 marks each
A	Solve the given problem using Crypt arithmetic method : SEND + MORE = MONEY
B	Explain different definitions of Artificial Intelligence according to different categories.
C	Explain components of an Expert System.
D	Explain Utility Based Agent with Block Diagram.
E	Explain Knowledge based Agent.
F	Explain problems in Hill Climbing Algorithm.

Q3.	
A	**Solve any Two** **5 marks each**
i.	What is PEAS Descriptors? Give PEAS Descriptors for Taxi Driver Agent.
ii.	Explain Expert System shell in short.
iii.	Write shorts on: Forward Chaining and Backward Chaining.
B	**Solve any One** **10 marks each**
i.	Differentiate between Informed and Uninformed Search Techniques. Also explain A* Algorithm in detail.
ii.	Given a full 4 gallon jug and an empty 3 gallon jug, the goal is to fill the 4 gallon jug with exactly 2 gallons of water. Give state space representation along with condition action rules.