QPC: RJ18001147 AR - 18 Reg. No. | | | | | | | | | | |

GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

B. Tech Degree Examinations, June – 2021

(Sixth Semester)

BITPC6030 – ARTIFICIAL INTELLIGENCE & EXPERT SYSTEMS (I.T)

Time: 2 hrs Maximum: 50 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

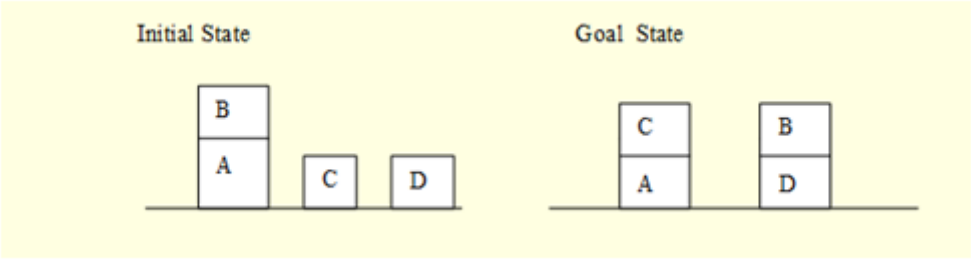
PART – A: (Multiple Choice Questions) (1 x 10 = 10 Marks)

Q.1. Answer ***ALL*** questions				[CO#]	[PO#]
a.	What is identified as Task domains of AI				
	(i) Engineering	(ii) Maths		1	1
	(iii) Financial Analyis	(iv) All			
b.	What is POP-11?				
	(i) AI Programming Language	(ii) AI Instance		1	1
	(iii) Combination of LISP & Prolog	(iv) AI Robot			
c.	Atoms are also known as _____ in knowledge representation				
	(i) variables	(ii) propositional variables		2	1
	(iii) predicate variables	(iv) constraint variables			
d.	Representation of facts is known as				
	(i) Math	(ii) Logic		2	1
	(iii) Program	(iv) Rules			
e.	Static Evaluation function occurs in				
	(i) Gaming	(ii) Playing		3	1
	(iii) Matching	(iv) Robo Development			
f.	Min-Max search procedure is also known as				
	(i) Best-first, depth-limited search procedure	(ii) Depth-first, breadth -limited search procedure		3	1
	(iii) Depth-first, depth-limited search procedure	(iv) Breadth-first, Depth-first search procedure			
g.	Which one of the below holds a single stack with both operators and goals			3	1
	(i) STRIPS	(ii) POP-11			
	(iii) GOAL STACK	(iv) HIP-19			
h.	Hearts game has a winning option by				
	(i) Learning from Advice	(ii) Learning from Experience		4	1
	(iii) Learning from examples	(iv) All			
i.	Shadow, Texture and Scenario are the components of				
	(i) Vision	(ii) Mission		4	1
	(iii) Perception	(iv) Goal			
j.	Compass could be an example for			4	1
	(i) Robot Architecture	(ii) Speech recognition			
	(iii) Navigation	(iv) Vision and Mission			

PART – B: (Short Answer Questions) **(2 x 5 = 10 Marks)**

Q.2. Answer ***ALL*** questions	[CO#]	[PO#]
a. Define Intelligence.	1	1
b. What is a heuristic function?	1	2
c. List the types of matching.	2	1
d. What is natural language processing?	3	1
e. Define perception.	4	1

PART – C: (Long Answer Questions) **(6 x 5 = 30 Marks)**

Answer ***ANY FIVE*** questions	Marks	[CO#]	[PO#]
3. Explain the applications of AI with examples	(6)	1	1
4. Trace the constraint satisfaction procedure solving the crypt arithmetic problem. TWO + TWO FOUR	(6)	1	3
5. Explain forward and backward chaining with detailed examples	(6)	2	2
6. Assume the following facts: 1. *man(Marcus)* 2. *Pompiean(Marcus)* 3. *- Pompiean(x1) ∨ Roman(x1)* 4. *ruler(Caesar)* 5. *- Roman(x2) ∨ loyalto(x2,Caesar) ∨ hate(x2,Caesar)* 6. *loyal(x3,f(x3))* 7. *- man(x4) ∨ - ruler(y1) ∨ - tryassassinate(x4,y1) ∨ loyalto(x4,y1)* 8. *tryassassinate(Marcus,Caesar)* Prove that Marcus hates Caeser using Resolution	(6)	2	3
7. Give the semantic Interpretation for the sentence "*Put the apple in the basket on the shelf*".	(6)	3	2
8. Initial State: ON(B, A) ^ ONT(C) ^ ONT(A) ^ ONT(D) ^ CL(B) ^CL(C) ^ CL(D) ^ AE Goal State: ON(C, A) ^ ON(B, D) ^ ONT(A) ^ ONT(D) ^ CL(C) ^ CL(B) ^ AE 	(6)	3	3
9. Apply Winstons learning programme on Blocks world programme with various cases for structural descriptions	(6)	4	3
10. Outline the various issues involved in the design of Robot Architecture	(6)	4	2

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