END SEMESTER

Subject : Artificial Intelligence

New Syllabus

Semester – 6th

Branch – Computer Engineering

Subject Code – CO-606

Full Marks - 70 (Part A – 25 + Part B – 45)

Duration – 3hours

Instructions :

1: Questions on Part A are compulsory and objective type.

2: Answer any four from Q.6 to Q.10 from Part B and any one from the rest.

Question No.	Questions		Marks	Course Outcome (CO)
1:	Fill in the blanks		1 X 5	
a	_____ is a humanoid robot created by Hanson Robotics.			1
b	NLP stands for _____			1
c	If – Then rule is part of _____ knowledge approach.			2
d	Knowledge acquisition and skill refinement are the two end of _____.			1
e	Chunks are group of _____rules .			1
2:	State true or false		1 X 5	
a	AI is based on the notion that human thought processes have the ability to be replicated and mechanized.			1
b	Ability to derive new structures from old corresponding to new knowledge is termed inferential efficiency.			2
c	BACON is a data driven discovery system.			2
d	Backward chaining starts with known facts.			2
e	TEIRESIUS is an intelligent editor.			1
3:	Answer briefly in a single sentence		1 X 5	
a	Define AI .			1
b	State what is problem space in AI.			1
c	What is transformational analogy ?			2
d	Which command is used to run a prolog program ?			3
e	Write the full form of LISP.			3
4:	Match the following		1 X 5	
a	Facts	i) Formal logic		3
b	Inferential knowledge	ii)Evolution		2
c	Plateau	iii) production system		2

d	Genetic learning	iv) Truth to represent		2
e	Markov	v) Hill climbing		2
5:	Choose the correct option		1 X 5	
a	Class descriptions are formed using attributes and relations in i) Constructive induction ii) Expedient induction iii) Selective induction iv) None of these			1
b	Computer system that emulates the decision making ability of a human expert is termed as i) production system ii) expert system iii) monotonic system iv) None of these			1
c	Semantic networks are _____ architecture i) production system ii) non- production system iii) client- server iv) none of these			2
d	In Prolog 'conjunction ' is represented by i) comma operator ii) semicolon operator iii) @ operator iv) none of these			3
e	The symbol $\exists$ means i) "for all" ii) "belongs to" iii) "there exists" iv) None of these			1

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PART – B

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6: a:	How do you define an intelligent system ? State two application of intelligent systems.	2 + 1	1
b:	State the difference between structural and procedural knowledge.	3	1
c:	Explain the inheritable knowledge representation with an example.	3	1
7: a:	There are many problems in representing knowledge. State the problems.	3	1
b:	State the basic differences in propositional and predicate calculus. OR "You are riding a bike"- Is this a proposition? Give reasons .	3	1
c:	What is Modus Ponen ? Explain.	1 + 2	1
8: a:	Why informed search is efficient than uninformed search?	2	2
b:	Explain any one informed search algorithm.	3	2
c:	State the two ends of learning. Differentiate between "rote learning" and "learning by taking advice".	1 + 3	2
9: a:	Illustrate explanation based learning system.	3	2
b:	Differentiate between transformational analogy and derivational analogy.	2	2
c:	What is a perceptron in neural net learning ?	2	2
d:	State the Genetic learning algorithm.	2	2
10: a:	Explain the various components of an "Expert System" with a diagram.	4	2
b:	Productions consists of two components, what are they? Write in brief about the features of production systems.	1 + 4	2
11: a:	Differentiate between Markov and Rete algorithm.	4	2

b:	Describe the structure of a Prolog program considering its three important constituents.	5	3

12: a:	Represent the following in Prolog :
	  i) Cat likes fish
	  ii) Jack likes anyone who likes playing chess.
	  iii) Meera slept on the couch.
		1+2+1	3

b:	Explain recursion technique and write the syntax to express any recursive relationship .	2 + 3	3

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