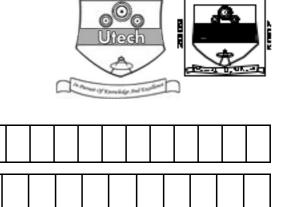
#### INTELLIGENT SYSTEM (SEMESTER - 6)

#### CS/BCA/SEM-6/BCAE-601B/09

Roll No. of the Candidate

Signature of Invigilator

Signature of the Officer-in-Charge



CS/BCA/SEM-6/BCAE-601B/09
ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE - 2009
INTELLIGENT SYSTEM ( SEMESTER - 6 )

Time: 3 Hours [ Full Marks: 70

#### **INSTRUCTIONS TO THE CANDIDATES:**

- 1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
- 2. a) In **Group A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
  - b) For **Groups B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group B** are Short answer type. Questions of **Group C** are Long answer type. Write on both sides of the paper.
- 3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
- 4. Read the instructions given inside carefully before answering.
- 5. You should not forget to write the corresponding question numbers while answering.

Reg. No.

- 6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
- 7. Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.
- 8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
- 9. Rough work, if necessary is to be done in this booklet only and cross it through.

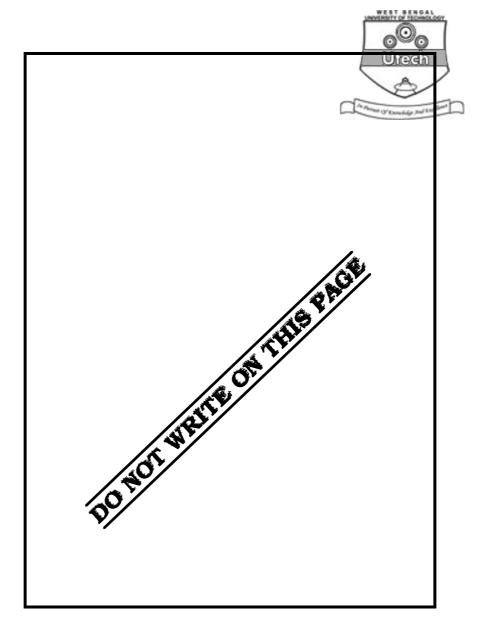
#### No additional sheets are to be used and no loose paper will be provided

# FOR OFFICE USE / EVALUATION ONLY Marks Obtained Group - A Group - B Group - C Question Number Marks Obtained Output Marks Obtained

Head-Examiner/Co-Ordinator/Scrutineer

6635 (03/06)







## ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE 2009 INTELLIGENT SYSTEM SEMESTER - 6

Time: 3 Hours ] [Full Marks: 70

#### **GROUP - A**

#### ( Multiple Choice Type Questions )

1.	Cho	ose th	ne most correct alternatives of th	ne folle	owing:	10 × 1 = 10	
	i)	Min	-Max role of game proceeds by a	attemp	oting to		
		a)	maximizing gain of opponent	b)	minimizing gain of self		
		c)	maximizing gain of self	d)	maximizing loss of self.		
	ii)	АВ	ayesian network is a / an				
		a)	tree	b)	directed graph		
		c)	undirected graph	d)	none of these.		
	iii)	The	orem proving is an example of				
		a)	procedural knowledge	b)	declarative knowledge		
		c)	heuristic	d)	none of these.		
	iv)	"Everyone is loyal to someone" can be represented by as provided					
		loya	(x, y) means $x$ is loyal to $y$ .				
		a)	$\forall x \exists y \ loyal (x, y)$	b)	$\forall x \exists y \ loyal \ (\ y\ , x\ )$		
		c)	$\forall y \forall x \ loyal \ (x, y)$	d)	$\forall x \forall y \ loyal \ (x, y).$		
	v)	Plaı	usibility <i>pl</i> and Belief <i>bel</i> of S are	e relat	ed by		
		a)	pl(S) = 1-bel(S)	b)	bel(S) = 1-pl(S)		
		c)	$pl(S) = 1-bel(\sim S)$	d)	$bel(S) = 1 = pl(\sim S).$		
	vi)	The time complexity of BFS is					
		a)	O ( <i>b</i> <sup>d</sup> )	b)	$e^{d}$		
		c)	$e^{b}$	d)	$O(d^b)$ .		

#### CS/BCA/SEM-6/BCAE-601B/09



vii)	The	space complexity of the Depth-f	irst sea	arch is	
	a)	O ( d )	b)	O ( bd )	
	c)	O ( <i>b</i> <sup>d</sup> )	d)	O(db)	
viii)	Skol	em function is used in		In Among the Samueles and Explana	
	a)	unification algorithm	b)	natural deduction	
	c)	conversion to clausal form	d)	semantic net.	
ix)	Acco	ording to the cognitive view of	learnin	g, largely de	termines
	what	t learners pay attention to, perc	eive, le	earn, remember and forget.	
	a)	declarative knowledge	b)	conditional knowldege	
	c)	prior knowledge	d)	procedural knowledge.	
x)	Kno	wledge coming from experience	is		
	a)	Belief	b)	Hypothesis	
	c)	Epistemology	d)	Heuristics.	

### GROUP – B ( Short Answer Type Questions )

Answer any three of the following.

 $3 \times 5 = 15$ 

- 2. How do you distinguish between Knowledge based System & Expert System?
- 3. What is the difference between Informed Search and Uniformed Search?
- 4. What do you mean by production system? Derive the parse tree for the sentence "Bill loves the frog" where the following rewrite rules are used.

 $S \rightarrow NP VP$ 

 $NP \rightarrow N$ 

 $NP \rightarrow DETN$ 

 $VP \rightarrow VNP$ 

 $DET \rightarrow the$ 

 $V \rightarrow loves$ 

 $N \rightarrow bill \mid frog$ 

- 5. What is the difference between Knowledge and Intelligence?
- 6. Compare and Contrast between BFS & DFS.

6635 (03/06)

#### CS/BCA/SEM-6/BCAE-601B/09



#### (Long Answer Type Questions)

Answer any three questions.



 $3 \times 15 = 45$ 

		This wer any trace questions.
7.	a)	What is Neural Network?
	b)	Describe Hopfield model. 5
	c)	Write down the WFF of the following statements:
		i) Jhon likes all fruits and Apple is fruit so John like Apple.
		ii) Some students are good students.
		iii) All children love their parents.
		iv) Marcus hate ruler and Ceaser is ruler so Marcus hate Ceaser.
		v) Rina likes food that Sima likes.
8.	a)	Describe with A* algorithm with example. 5
	b)	Describe the approaches of Knowledge representation. 5
	c)	What are the problems that a heuristic search may face? Explain them. 5
9.	a)	What is Expert System? Explain with example. 5
	b)	What do you meant by knowledge acquisition?
	c)	Write down the algorithm of DFS. 5
10.	a)	Write down the steps to convert the predicates into clausal form. 7
	b)	Prove or disprove with justification:
		$(\forall x) \{ P(x) \rightarrow \{ (\forall y) [P(y) \rightarrow P(f(x,y))] \& \{ \neg (\forall y) [Q(x,y) \rightarrow P(y)] \} \} \}$
11.	Write	e short notes on any <i>three</i> of the following: $3 \times 5$
	a)	Genetic Algorithm
	b)	Heuristic Search
	c)	8 puzzle problem
	d)	Predicate Logic
	e)	Learning by Induction.

**END**