B.E. (Computer Engineering) Eighth Semester (C.B.S.)

Elective - IV : Expert System Design

P. Pages : 2 **NRJ/KW/17/4772**

Time : Three Hours * 0 2 9 9 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Define artificial intelligence and state it's significance in an expert system. **7**

b) Explain Heuristic Reasoning with suitable example. **6**

OR

2. a) Write a note on : **6**

i) XCON

ii) MYCIN

b) Explain the following terms **7**

i) knowledge acquisition

ii) knowledge representation

3. a) Explain prepositional logic with proper example. **7**

b) Give the significance of casual logic form and state it's conditions. **7**

OR

4. a) Describe briefly the resolution strategies. **8**

b) Write a note on first order predicate logic. **6**

5. a) Enlist various formalisms used for representing expert knowledge. **6**

b) Briefly explain top - down and bottom - up inference. **7**

OR

6.	a)	Explain the terms :	**7**
		i) single valued pattern variable &	
		ii) multi valued pattern variable.	
	b)	Draw and explain the global architecture of a production system.	**6**
7.	a)	With proper example explain semantic nets & frames.	**7**
	b)	State the difference between generic frames & instance frames.	**6**

OR

8.	a)	Using multiple inheritance show internal structure of frame using tree for 'The aorta has a diameter equal to 2.5 cm'.	**6**
	b)	Define superclass link & single inheritance.	**7**
9.	a)	Explain the notations used for measuring uncertainty.	**7**
	b)	With a suitable example explain Bayesian method.	**7**

OR

10.	a)	Describe the certainty factor model.	**6**
	b)	State the Dempster - Shafer theory.	**8**
11.	a)	Give the importance of single layer perceptrons.	**7**
	b)	Write a note on hybrid intelligence.	**6**

OR

12.	a)	Draw and explain biological neural system.	**7**
	b)	State the difference between supervised and unsupervised learning.	**6**

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