B.E. (Information Technology) Eighth Semester (C.B.S.)

Elective-III : Pattern Recognition

P. Pages : 1 **NRT/KS/19/3704**

Time : Three Hours * 0 8 1 7 * 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. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1.	a)	Illustrate the overview of pattern recognition system.	**7**
	b)	Explain supervised and unsupervised learning with example.	**6**
		OR	
2.	a)	Discuss various applications of pattern recognition.	**7**
	b)	Describe any one model of pattern recognition system.	**6**
3.	a)	What are the challenges in Bayesian decision theory?	**7**
	b)	Define the term loss, risk and decision rule.	**6**
		OR	
4.	a)	Explain how patterns are classified using distance function.	**6**
	b)	Describe maximum like hood Estimation.	**7**
5.	a)	Explain C means algorithm in detail.	**7**
	b)	In detail explain about graph theoretic approach to pattern clustering.	**7**
		OR	
6.	a)	Explain how validity of cluster are performed.	**7**
	b)	Describe FCMA in detail.	**7**
7.	a)	Explain various features of stochastic grammar.	**7**
	b)	Discuss structural pattern recognition in detail.	**7**
		OR	
8.	a)	Write short note on KL- transform.	**7**
	b)	Describe various elements of formal grammar.	**7**
9.	a)	Explain Recognition task of HMM.	**7**
	b)	In detail explain linear support vector machine.	**6**
		OR	
10.		Write short note on. i) Hidden Markov Model. ii) Role of feature selection in SVM.	**13**
11.	a)	Explain fuzzy pattern classifier.	**6**
	b)	Discuss fuzzy logic vs crisp logic.	**7**
		OR	
12.		Explain pattern classification using genetic algorithm.	**13**

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