Department of Computer Science and Engineering
Unit Test-I, Odd Semester 2024
Introduction to GIS and Remote Sensing (OEC-CS702C)

FM: 15 Time Allotted: 45 Minutes

Answer any three questions: 5×3=15

1. Explain in detail about different types of sensors. Elaborate the differences between spatial resolution and spectral resolution. 4+1
2. What are the different types of electromagnetic waves used in remote sensing? What are the applications of the microwave electromagnetic spectrum in remote sensing? 3+2
3. What are the applications of Remote Sensing in Earthquake Studies? Explain the different types of platforms used in the remote sensing. 2+3
4. Explain the different components of remote sensing with details. What are the challenges in remote sensing? 4+1

CSE / Internal-1 / 2024/ SUBJECT- SIGNAL & SYSTEM (ESC-CS701)

Full Marks- 15 Time: 45 min

1. Answer any four of the following question (2.5×4)

Justify your answer with examples if necessary

i) Even. Even = Even

ii) Odd. Odd =Even

iii) All the Non causal signals are not anti-causal but all the Anti-Causal signal are Non – Casual

iv) All the Periodic signals are always power signals. But the entire power signal is not periodic signals.

v) $X(t) = A\, e^{jwt}$ is a power signal.

vi) $2+ \cos 2\pi t$ is a periodic signal.

2. Draw the following signals (2.5×2)

i) $X(t) = e^{-|t|}$

ii) $X(t) = 2u(t+2) - 2\,u(t-3)$

Department of Computer Science and Engineering
Unit Test-I, Odd Semester 2024
Machine Learning (PEC-CS702D)

FM: 15

Answer any three questions:

Time Allotted: 45 Minutes

5×3=15

1. Use the k-means algorithm and Euclidean distance to cluster the following 8 examples into 3 clusters: A1=(2,10), A2=(2,5), A3=(8,4), B1=(5,8), B2=(7,5), B3=(6,4), C1=(1,2), C2=(4,9). Suppose that the initial centres of each cluster are A1, B1 and C1 respectively. Run the k-means algorithm for 2 epochs only. 5
2. Explain the steps of the K-NN algorithm. Why K-NN is called a lazy learner? Give some applications of the K-NN algorithm. 3+1+1
3. Explain the PCA algorithm with an example. Give some applications of PCA algorithm. 4+1
4. How the SVM algorithm works-explain? Why the kernel trick is used in SVM? 4+1

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JGEC/B.TECH./CSE /OEC-CS 701A/2024-25/ClassTest I

HUMAN RESOURCE DEVELOPMENT AND ORGANIZATIONAL BEHAVIOR

Full Marks: 15

Time: 45 min

Answer the question

1. What is organizational behavior? Write its importance .What is personality? Write determinants of personality. 1x15=15

3+4+2+6

1st INTERNAL/ NEURAL NETWORK & DEEP LEARNING/ CS702A/ 7TH SEM-CSE/28.09.2024/ FM: 15

1. What is activation function? Discuss about, Sigmoid function and Hyperbolic Tangent Function. 1+4=5
2. What is Perceptron learning rule? Form a Perceptron model and train it to realize the logical AND function. Initialize the weight $W_0 = W_1 = W_2 = 0$ and learning rate $h=1$ 7
3. What is generalized delta rule? 3