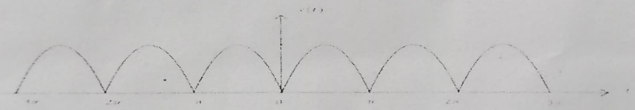
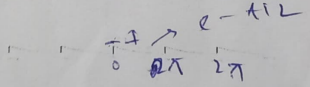
JALPAIGURI GOVERNMENT ENGINEERING COLLEGE
SIGNAL AND SYSTEMS (ES-CS-701)

Full Marks: 15 | Answer any *2* questions | 2x7.5=15 | Times: 45minutes

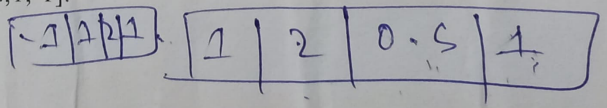
1. Derive the Trigonometric Fourier Series Expansion and draw the corresponding line and phase spectrum of the following signal.



2. Find the Fourier series coefficients of the following signals using Trigonometric Fourier Series Expansion.



3. Find the linear convolution of the following with the graphical method only.
X(n)={1,2,0.5,1} and h(n)=[1,2,1,-1].



Jalpaiguri Government Engineering College
Unit Test-II, 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. Discuss in details about the most common types of sensors that are used in remote sensing. 5
2. What are the applications of passive microwave remote sensing? What do you mean by polarization in microwave remote sensing? 3+2
3. What do you mean by GIS? Discuss the sources of Geospatial data in GIS. 2+3
4. What is aerial photography? State three characteristics of aerial photography. What do you understand by photogrammetry? 1+3+1

Jalpaiguri Government Engineering College
Unit Test-II, Odd Semester 2024
Machine Learning (PEC-CS702D)

FM: 15 Time Allotted: 45 Minutes

Answer any three questions: 5×3=15

1. What is the difference between soft clustering and hard clustering? What is the difference between GMM and K-means clustering? Write down the steps of Expectation-Maximization algorithm. 1+1+3
2. What do you mean by CNN? Why activation functions are used in CNN. Discuss the different types of activation functions used in CNN. 1+1+3
3. What is the difference among linear, polynomial and multiple regression? What is logistic regression? How it can be used in classification? 3+1+1
4. What is ensemble learning? Discuss different types of ensemble learning techniques. What are the real life examples of ensemble learning? 1+3+1

JALPAIGURI GOVERNMENT ENGINEERING COLLEGE
[A GOVERNMENT AUTONOMOUS CO JGEC/B.TECH/ CSE/OEC-CS701A/ 2024-25

Full Marks: 15 HUMAN RESOURCE

DEVELOPMENT AND ORGANIZATIONAL BEHAVIOUR

Times:1Hours

The figures in the margin indicate full marks.

Candidates are instructed to write the answers in their own words as far as practicable.

Answer any *1* questions 1X 15 =15

1 What is stress ?what stress management steps can organization take to minimize stress among employees ? Explain the factor theory of

2 What is organizational behavior ? Write its importance . Write determinants of personality . What are the types of personality? Wr personality ,attitude and job satisfaction 2+3+3+3+4

Neural Networks and Deep Learning (PEC-CS701C)

Date of Examination: 20.12.24 (Internal Exam-2) CSE Dept.

Full Marks: 15

Time: 45 Minutes

Attempt any *three. (Each question carries 5 marks)*

1. What is convolution? Find dimensions of output feature map when 128 number of kernels (each kernel is of size 7x7) are applied on an input feature map of size 64x112x112 (CxHxW). Use padding=2 and stride=2.
2. Explain binary cross entropy loss and multi class cross entropy loss with expressions and examples.
3. What is depth wise separable convolution and how does it reduce computing cost compared to general convolution.
4. Explain Recurrent Neural Network (RNN) with diagram.

$\frac{3-2+2}{2}$