


Name:			
Enrolment No:			
<b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b> <b>End Semester Examination, Dec 2023</b>			
<b>Course:</b> Deep Learning and ANN <b>Program:</b> MCA <b>Course Code:</b> CSAI8003P		<b>Semester:</b> III <b>Time</b> : 03 hrs. <b>Max. Marks:</b> 100	
<b>Instructions: Attempt all Questions.</b>			
<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
S. No.		Marks	CO
Q 1	Explain the basic differences between AI, ML and DL with the help of an example.	4	CO1
Q2	What is pooling in CNN? Briefly explain different types of pooling operations.	4	CO1
Q3	Explain the characteristics of Sigmoid neuron.	4	CO1
Q4	What are the criteria of choosing the loss function while developing a model.	4	CO2
Q5	Define the following terms: a) stride b) epochs	4	CO3
<b>SECTION B</b> <b>(4Qx10M= 40 Marks)</b>			
Q6	Explain in detail about the concept of gradient based learning. Also write the pseudo code of gradient descent.	10	CO1
Q7	What is an Autoencoder? Explain the applications of Autoencoder in detail.	8+2	CO1
Q8	What is an RNN? How does an RNN differ from other neural Networks?	7+3	CO2
Q9	What is transfer learning? How can you use transfer learning with predefined VGG model to create an autoencoder that takes a grey level image and converts it into color image.	10	CO3
<b>SECTION-C</b> <b>(2Qx20M=40 Marks)</b>			
Q10	a) You are given a neural network that does the digit classification task, there are two hidden layers h1 (consisting of 5 neurons), h2 (3 neurons). Given a random image 8x8 as input, write down the vectorized output after every hidden layer.	10+10	CO2

	<p>b) Build the above model using Tensorflow, showing how input is read, layers are added to the model and explain various operations while learning the weights of the given input.</p>		
Q11	<p>a) Explain the LSTM (Long Short-Term Memory) model in detail.  b) Explain the working of Generative adversarial Networks in detail.</p> <p style="text-align: center;"><b>OR</b></p> <p>a) What are Convolutional Neural networks, explain various phases of CNN. Justify your answer with appropriate figures.  b) What is deep reinforcement learning. Explain policy gradient methods in detail.</p>	<b>10+10</b>	<b>CO3</b>