QPC: RN19BTECH625 AR 19 Reg. No

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Seventh Semester – Regular) Examinations, November – 2022

BPECS7031 / BPECT7021 – Deep Learning

(CSE / CST)

Time: 3 hrs Maximum: 70 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) **(1 x 10 = 10 Marks)**

Q.1. Answer ***ALL*** questions [CO#] [PO#]

a. What are the advantages of neural networks over conventional computers? CO1 PO1

(i) They have the ability to learn by example (ii) They are more fault tolearnt

(iii) They are more suited for real time operation due to their high computational rates. (iv) All of the mentioned

b. Neural networks are complex _____with many parameters CO1 PO1

(i) Linear Function (ii) Nonlinear Functions

(iii) Discrete Functions (iv) Exponential Functions

c. Perceptron adds up all the weighted inputs it receives, and if it exceeds a certain value, it outputs a 1, otherwise it just outputs a 0. CO1 PO1

(i) True (ii) False

(iii) Sometimes – it can also output intermediate values as well (iv) Can't say

d. Which of the following is an application of NN(neural network)? CO1 PO1

(i) Sales forecasting (ii) Data Validation

(iii) Risk management (iv) All of the mentioned

e. Different learning methods does not include CO1 PO1

(i) Memorization (ii) Analogy

(iii) Deduction (iv) Introduction

f. Which of the following is the model used for learning CO1 PO1

(i) Decision Trees (ii) Neural Networks

(iii) Propositional and FOL rules (iv) All of the mentioned

g. Which of the following is an example of deep learning CO2 PO1

(i) Self-driving cars (ii) Pattern Recognition

(ii) Natural Language Processing (iii) All of the above

h. Autoencoder is an example of CO4 PO1

(i) Deep Learning (ii) Machine Learning

(iii) Data Mining (iv) None

i. Which of the following deep learning models uses back propagation CO4 PO1

(i) Convolutional Neural Networks (ii) Multilayer Perceptron Network

(iii) Recurrent Neural Network (iv) All of the above

j. Which of the following steps can be taken to prevent overfitting in a neural network CO4 PO1

(i) Dropout of neurons (ii) Early stopping

(iii) Batch Normalization (iv) All of the above

PART – B: (Short Answer Questions) **(2 x 10 = 20 Marks)**

Q.2. Answer ***ALL*** questions	[CO#]	[PO#]
a. What are the difference between Neural Network and DNN.	CO1	PO1
b. List out few applications of Deep Learning	CO1	PO1
c. What is training data	CO1	PO1
d. Expand RNN, where is RNN used	CO1	PO1
e. What is LSTM.	CO2	PO1
f. Why use Fully Connected Layers	CO1	PO2
g. Define Convolutional Neural Network.	CO1	PO1
h. Explain feature maps, with example.	CO3	PO1
i. What is sobel filter	CO3	PO2
j. What is encoder.	CO4	PO1

PART – C: (Long Answer Questions) **(10 x 4 = 40 Marks)**

Answer ***ALL*** questions	Marks	[CO#]	[PO#]
3. a. Describe with help of a diagram feed forward network. Also explain each of the notations.	6	CO3	PO2
b. Define Error in Deep Learning. Write the formula for Mean Error Loss	4	CO3	PO1
(OR)			
c. What is classification? Describe the different types of classifications.	7	CO3	PO1
d. What is an MP neuron?	3	CO1	PO1
4. a. What is multilayer perceptron. Explain how it work for XOR gate.	5	CO1	PO1
b. Describe ReLU with help of a diagram.	5	CO3	PO1
(OR)			
c. What is regularization? Demonstrate different regularization techniques available	7	CO4	PO2
d. Explain Dense layer? In multi-class classification how it is used?	3	CO3	PO1
5. a. How do we prevent overfitting in Deep Learning Neural networks.	5	CO3	PO2
b. Illustrate different platforms available for implementing Deep Learning.	5	CO3	PO2
(OR)			
c. For the given 6 x 6 image, apply vertical edge detection. Use 3 x 3 filter. Find the resultant 4 x 4 matrices.	6	CO3	PO3

10	10	10	0	0	0
10	10	10	0	0	0
10	10	10	0	0	0
10	10	10	0	0	0
10	10	10	0	0	0
10	10	10	0	0	0

d. What is the need of pooling? Mention different types of pooing techniques	4	CO3	PO3
6. a. What is the need of optimization? List out few optimization functions in Deep Learning	5	CO3	PO3
b. What is early stopping. How does it impact on the number of epochs.	5	CO4	PO2
(OR)			
c. Demonstrate briefly about LeNet Architecture	7	CO3	PO1
d. Explain Autoencoder and Decoder	3	CO3	PO1

--- End of Paper ---