

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2024

B.Tech-VIII Semester (BI)

COURSE CODE(CREDITS): 18B1WCI843 (3)

MAX. MARKS: 25

COURSE NAME: Data Analytics

COURSE INSTRUCTORS: Ekta Gandotra

MAX. TIME: 1 Hour 30 Minutes

Note: (a) All questions are compulsory.

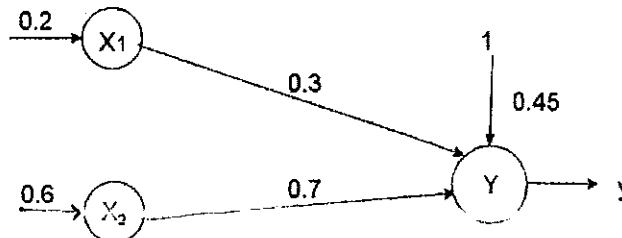
(b) Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

- Q1. CO-4 a. What is the significance of one-way ANOVA test? [2]
b. Find the variance between and within samples using one-way ANOVA for the following data: [3]

A	B	C
25	31	24
30	39	30
36	38	28
38	42	25
31	35	28

- Q2. CO-2 a. Explain overfitting and underfitting in terms of bias and variance errors. [3]
b. Suppose you build a model which shows a training accuracy of 97% and a test accuracy of 60%. What could be the possible reasons for the gap between these accuracies? [2]
- Q3. CO-4 a. Calculate the net input for the network shown in figure with bias included. [2]
b. Obtain the output of the neuron Y for the network using activation functions as binary Sigmoidal. [3]



- Q4. CO-3 a. What is the “Kernel trick” in SVM? Explain with the help of an example. [3]
 b. Explain vanishing gradient problem. [2]
- Q5. CO-3 Given the following dataset, find the class of the test sample using k-NN algorithm. [5]
 Take $k=3$. Use Euclidean distance for computation.

Height (CM)	Weight (KG)	Class
167	51	Underweight
173	64	Normal
172	65	Normal
174	56	Underweight
169	58	Normal
168	53	Underweight

Test Sample.

Height (CM)	Weight (KG)	Class
170	57	?