M.Sc. 3rd Semester Examination, 2023

COMPUTER SCIENCE

PAPER – COS-395(M1 & M2)

Full Marks : 25

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

PAPER – COS-395(M1)

(*Advanced Networking Lab*)

Time : 3 hours

Answer any **one** of the following questions : 15×1

1. Write a program to implement the Stop and Wait Protocol.

2. Write a program to implement the Sliding Window Protocol.

3. Write a program to implement a Client-Server model.

4. Write a program to implement a UDP Client-Server model.

5. Write a program to implement a TCP Client-Server model.

6. Write a program to Create a socket for HTTP for web page upload and download.

7. Write a program to implement RPC (Remote Procedure Call).

8. Write a code simulating ARP/RARP protocols.

9. Write a code simulating PING and TRACE-ROUTE commands.

10. Write a program to implement the Sub-netting.

[PNB & Viva – 10 Marks]

PAPER — COS-395(M2)

(*Machine Learning Lab*)

Time : 2 hours

Answer any **one** questions on lottery basis : 20×1

Write source code and input-output for each of the program.

1. Write a program in python jupyter notebook to implement the Naïve Bayes classification algorithm, import all necessary packages and load a data in .csv form either from url or from sklearn datasets. Split the datasets in 75% as training and 25% as test. Find the accuracy of your model.

2. Write a program in python jupyter notebook to implement the following functions :

   (*i*) Import the package pandas and then read any excel file (either from url or from your local disk)

(*ii*) Display the first ten rows of the dataset

(*iii*) Find the co-variance matrix of that dataset

(*iv*) In the next cell import matplotlib package and plot the bar chart with the mean values of the attributes of the dataset.

3. Write a program in python jupyter notebook to implement the logistic regression for binary classification algorithm, import all necessary packages and load any data in .csv form either from url or from sklearn datasets. Split the datasets in 80% as training and 20% as test. Find the evaluation metrics of your model.

4. Write a program in python jupyter notebook to implement the SVM multiclass classification algorithm, import all necessary packages and load any data in .csv form either from url or from sklearn datasets. Split the datasets in 75% as training and 25% as test. Find the evaluation metric of your model.

5. The probability that it is Friday and that a student is absent is 3%. Since there are 5 school days in a week, the probability that it is Friday is 20%. What is theprobability that a student is absent given that today is Friday ? Apply Baye's rule in python to get the result.

6. Implement linear regression using python.

7. Implement Naive Bayes theorem to classify the English text.

8. Build KNN Classification model for a given dataset.

Viva voce – 3
PNB – 2
