

ADMISSION NUMBER

## School of Computing Science and Engineering

**Master of Computer Applications  
Semester End Examination - Jun 2024**

**Duration : 180 Minutes  
Max Marks : 100**

### Sem II - E1PY202C - Machine Learning

General Instructions

*Answer to the specific question asked*

*Draw neat, labelled diagrams wherever necessary*

*Approved data hand books are allowed subject to verification by the Invigilator*

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|----|---|--------|
| 1) | Investigate the concept of Hyperplane in an SVM   | K1(2)  |
| 2) | Explain the concept of Version Space in Machine Learning  | K2(4)  |
| 3) | Choose any 6 Data Visualization Techniques used for plotting  | K2(6)  |
| 4) | Describe how Deep Fake has raised some Social Concern.  | K3(9)  |
| 5) | Chat GPT can be used to Solve some real world Problem discuss how?  | K3(9)  |
| 6) | Determine the procedures involved in K fold cross Validation with an example,   | K5(10) |
| 7) | Design Hierarchical clustering Dendrogram For the given data set {127,200,67,28,35, 55,45}, perform hierarchical clustering using single linkage and plot the dendrogram to visualize it. | K4(12) |
| 8) | Decide the EPT of Following Task: 1) A checkers learning problem<br>2) Tutoring System 3) Floor cleaning Robot  | K5(15) |
| 9) | Estimate the class of X<br><b>X = (age = youth, income = medium, student = yes, credit rating = fair)</b>   | K5(15) |

Develop Naive Bayes Classifier to Classify X based on Following Data

RID	AGE	INCOME	STUDENT	Credit Rating	Class: Buys_ computer
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1	youth	high	no	fair	no
2	youth	high	no	excellent	no
3	middle aged	high	no	fair	yes
4	senior	medium	no	fair	yes
5	senior	low	yes	fair	yes
6	senior	low	yes	excellent	no
7	middle aged	low	yes	excellent	yes
8	youth	medium	no	fair	no
9	youth	low	yes	fair	yes
10	senior	medium	yes	fair	yes
11	youth	medium	yes	excellent	yes
12	Middle aged	Medium	no	excellent	yes
13	Middleaged	high	yes	fair	yes
14	senior	medium	no	excellent	no

- 10) Evaluate the given input Matrix ,Apply Single Linkage to cluster the Data. show the result in dendrogram and represent the cluster in X-Y space

K6(18)

Dist	A	B	C	D	E	F
A	0.00	0.71	5.66	3.61	4.24	3.20
B	0.71	0.00	4.95	2.92	3.54	2.50
C	5.66	4.95	0.00	2.24	1.41	2.50
D	3.61	2.92	2.24	0.00	1.00	0.50
E	4.24	3.54	1.41	1.00	0.00	1.12
F	3.20	2.50	2.50	0.50	1.12	0.00