

SPPU-BE-COMP-CONTENT – KSKA Git

Total No. of Questions : 8]

SEAT No. :

PA-913

[Total No. of Pages : 3

[5927]-343

B.E. (Computer)

MACHINE LEARNING

(2019 Pattern) (Semester - VII) (410242)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Make suitable assumption whenever necessary.

- Q1)** a) Explain in brief techniques to reduce under fitting and over fitting. [6]
- b) Find the Equation of linear Regression line using following data : [6]

X	Y
1	3
2	4
3	5
4	7

- c) Write short note on : [6]
- i) MAE
 - ii) RMSE
 - iii) R^2

OR

- Q2)** a) Explain in brief lasso and Ridge Regression. [6]
- b) What is Bias and variance trade off for machine learning model? [6]
- c) Write short note on Evaluation metrics. [6]

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- Q3) a)** Explain in brief methods used for Evaluating classification models. [5]
- b) Consider the following data to predict the student pass or fail using the K-Nearest Neighbor Algorithm (KNN) for the values physics = 6 marks, Chemistry = 8 marks with number of Neighbors K = 3. [6]

Physics (marks)	Chemistry (marks)	Results
4	3	Fail
6	7	Pass
7	8	Pass
5	5	Fail
8	8	Pass

- c) Write short note on Ensemble learning methods. [6]
- i) Simple
 - ii) Advanced

OR

- Q4) a)** Explain Random forest Algorithm with example. [5]
- b) Write short note on importance of confusion matrix. [6]
- c) Define following terms with reference to SVM. [6]
- i) Separating hyperplane
 - ii) Margin

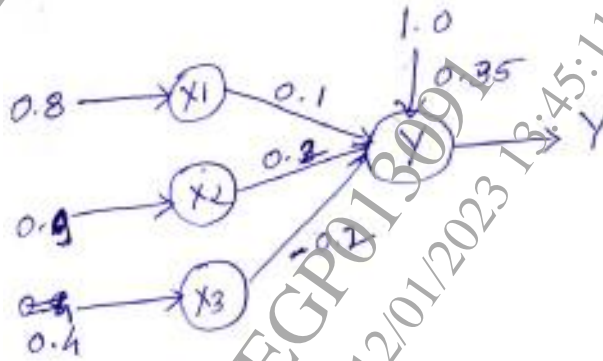
- Q5) a)** Explain Density Based clustering with reference to DBSCAN, OPTICS and DENCLUE. [6]
- b) What is K mean clustering? Explain with example. [6]
- c) Write short note on following Hierarchical clustering method : [6]
- i) Agglomerative
 - ii) Dendogram

OR

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- Q6)** a) What is LOF? Explain it with it's advantages and disadvantages. [6]
b) Explain Graph Based clustering. [6]
c) Define following terms : [6]
i) Elbow method
ii) Extrinsic and Intrinsic method

- Q7)** a) Explain ANN with it's Architecture. [5]
b) Obtain the output of Neuron Y for the Network shown in following fig. Using activation function as : [6]
i) Binary sigmoidal
ii) Bipolar sigmoidal



- c) Write short note on Back propagation network. [6]

OR

- Q8)** a) Explain in brief types of ANN based on layers. [5]
b) What is Recurrent Neural Network? Explain with suitable example. [6]
c) Write short note on with refernce with CNN. [6]
i) Convolution layer
ii) Hidden layer
