Printed Page:- Subject Code:- AMBABI0312

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

MBA

SEM: III - THEORY EXAMINATION (2021 - 2022)

Subject: Machine Learning & Artificial Intelligence

Time: 03:00 Hours Max. Marks: 100

General Instructions:

1. All questions are compulsory. It comprises of three Sections A, B and C.

- Section A - Question No- 1 is objective type question carrying 1 mark each & Question No- 2 is very short type questions carrying 2 marks each.
- Section B - Question No- 3 is Long answer type - I questions carrying 6 marks each.
- Section C - Question No- 4 to 8 are Long answer type - II questions carrying 10 marks each.
- No sheet should be left blank. Any written material after a Blank sheet will not be evaluated/checked.

SECTION A 20

1. Attempt all parts:-

1-a. _____ data are noisy and have many missing attribute values. [CO1] 1

1. Preprocessed.
2. Cleaned.
3. Real-world
4. Transformed.

1-b. What is regression? [CO1] 1

1. When the output variable is a category, such as “red” or “blue” or “disease” and “no disease”.
2. When the output variable is a real value, such as “dollars” or “weight”.
3. Both of the above
4. None of these

1-c. A decision tree is built in _____ fashion.[CO2] 1

1. Top-Down
2. Bottom -Up
3. Both of above
4. None

1-d. _____is the measure of uncertainty of a random variable, it characterizes the impurity of an arbitrary collection of examples.[CO2] 1

1. Information Gain
2. Gini Index

3. Entropy
4. none of these

1-e. _____ algorithm most sensitive to outliers.[CO3] 1

1. k-medoied
2. k-mean
3. Association rule
4. hierachical

1-f. In simple term, machine learning is [CO3] 1

1. training based on historical data
2. prediction to answer a query
3. both 1 and 2
4. Automization of complex tasks

1-g. The technology that has the ability to interact with the world. [CO4] 1

1. AI
2. ML
3. IOT
4. IT

1-h. Artificial Intelligence is about_____. [CO4] 1

1. Playing a game on Computer
2. Making a machine Intelligent
3. Programming on Machine with your Own Intelligence
4. Putting your intelligence in Machine

1-i. Which search method takes less memory? [CO5] 1

1. Depth-First Search
2. Breadth-First search
3. Optimal search
4. Linear Search

1-j. A* algorithm is based on _____. [CO5] 1

1. Breadth-First-Search
2. Depth-First –Search
3. Best-First-Search
4. Hill climbing

2. Attempt all parts:-

2-a. Define types of Machine Learning.[CO1] 2

2-b. Define Supervised and Un-supervised Learning.[CO2] 2

2-c. Differentiate between clustering and classification. [CO3] 2

2-d. Explain Multi Agent system? [CO4] 2

2-e. Differentiate the DFS and BFS with merits and demerits.[CO5] 2

SECTION B 30

3. Answer any five of the following:-

3-a.	Mention the various types of machine learning techniques.[CO1]	6
3-b.	Define the Numerosity reduction techniques in details.[CO1]	6
3-c.	Define the issues in Decision Tree Learning. Interpret the algorithm with respect to Overfitting the data.[CO2]	6
3-d.	Define lazy learner. How the value of k is chosen in KNN algorithm.[CO2]	6
3-e.	Mention the various types of clustering techniques.[CO3]	6
3-f.	Write the application area of Artificial Intelligence. [CO4]	6
3-g.	Explain Tic tac toe problem in artificial intelligence. [CO5]	6

SECTION C 50

4. Answer any one of the following:-

4-a.	Define data mining also explain the Functionalities of Data mining.[CO1]	10
4-b.	Explain various methods of principal component analysis with example.[CO1]	10

5. Answer any one of the following:-

5-a.	Perform KNN Classification Algorithm on the following data set and predict the class for x (P1=3 and P2=7), where k=3 [CO2]	10

P1	P2	Class
7	7	False
7	4	False
3	4	True
1	4	True

5-b.	What is prediction? Explain the various prediction techniques. Explain about Decision tree Induction classification technique.[CO2]	10

6. Answer any one of the following:-

6-a.	Define learning process in machine learning, also explain applications of machine learning.[CO3]	10
6-b.	What are the applications of association rule mining? Explain support and confidence.[CO3]	10

7. Answer any one of the following:-

7-a.	Define intelligent agent in AI. Also Differentiate between Goal based and Utility based Agent . [CO4]	10
7-b.	What is the role of NLP in AI? Define various phases of NLP. [CO4]	10

8. Answer any one of the following:-

8	What is A* search? Explain various stages of A* search with an example. [CO5]	10
8	Explain Feedforward Neural Network and Recurrent Neural Network with their architecture.[CO5]	10