

BCM SCHOOL
BASANT AVENUE, DUGRI ROAD, LUDHIANA
CLASS X
ARTIFICIAL INTELLIGENCE (417)
ASSIGNMENT SOLUTIONS

Q1) Multiple Choice Questions

(5 mark Questions)

1) Which of the following is correct about the rule-based approach?

- a. We cannot provide enough rules to the machine.
- b. A drawback/feature for this approach is that the learning is static.**
- c. Once the rules are fed into the system, it takes into consideration any changes made in the original training dataset.
- d. It can improve itself based on the feedbacks.

2) A business problem wherein we categorize whether an observation is "Safe," "At Risk," or "Unsafe" is an example of

- a. Classification**
- b. Clustering
- c. Regression
- d. Dimensionality Reduction

3) Assertion (A): We can use histograms when data is in categories (such as "Pop", "Rock", "Jazz", "Hip-Hop" etc.)

Reason (R): We use bar charts when we have continuous data (such as a person's height or weight)

a. (A) is false but (R) is true

b. (A) is true but (R) is false

c. Both (A) and (R) are true

d. Both (A) and (R) are false

4) Choose the correct option

a. Unsupervised learning -> labelled dataset, Regression

b. Supervised learning -> labelled data set, Regression

c. Unsupervised learning -> unlabelled dataset, Classification

d. Supervised learning -> unlabelled data set, Regression

5) Data about the houses such as square footage, number of rooms, features, whether a house has a garden or not, and the prices of these houses, i.e., the corresponding labels are fed into an AI machine. By leveraging data coming from thousands of houses, their features and prices, we can now train the model to predict a new house's price. This is an example of

a) Reinforcement learning **b) Supervised learning** c) Unsupervised learning d) None of the above

6) _____ is defined as the percentage of correct predictions out of all the observations.

a) Predictions **b) Accuracy** c) Reality d) F1 Score

7) In _____, the machine is trained with huge amounts of data which helps it in training itself around the data.

a) Supervised Learning **b) Deep Learning** c) Classification d) Unsupervised

1) What are the two different approaches for AI modelling? Define them

Ans:- There are two approaches for AI Modelling; Rule Based and Learning Based. The Rule based approach generates pre-defined outputs based on certain rules programmed by humans. Whereas, machine learning approach has its own rules based on the output and data used to train the models.

2) Draw the graphical representation of Classification AI model. Explain in brief.

Ans :- Classification: The classification Model works on the labelled data. For example, we have 3 coins of different denomination which are labelled according to their weight then the model would look for the labelled features for predicting the output. This model works on discrete dataset which means the data need not be continuous. OR In classification, data is categorized under different labels according to some parameters given in input and then the labels are predicted for the data

3) Draw the graphical representation of Regression AI model. Explain in brief

Ans:- Regression: These models work on continuous data to predict the output based on patterns. For example, if you wish to predict your next salary, then you would put in the data of your previous salary, any increments, etc., and would train the model. Here, the data which has been fed to the machine is continuous. OR Regression is the process of finding a model for distinguishing the data into continuous real values instead of using discrete values. It can also identify the distribution movement depending on the historical data

4) Draw the graphical representation of Clustering AI model. Explain in brief.

Ans:- Clustering: It refers to the unsupervised learning algorithm which can cluster the unknown data according to the patterns or trends identified out of it. The patterns observed might be the ones which are known to the developer or it might even come up with some unique patterns out of it. OR Clustering is the task of dividing the data points into a number of groups such that data points in the same groups are more similar to other data points in the same CBSE Question Bank – AI – Class 10 – Chapter 3 AI Project Cycle 4 group and dissimilar to the data points in other groups. It is basically a collection of objects on the basis of similarity and dissimilarity between them.

5) Explain Data Exploration stage

Ans:- In this stage of project cycle, we try to interpret some useful information out of the data we have acquired. For this purpose, we need to explore the data and try to put it uniformly for a better understanding. This stage deals with validating or verification of the collected data and to analyze that: • The data is according to the specifications decided. • The data is free from errors. • The data is meeting our needs.