



BK BIRLA CENTRE FOR EDUCATION
SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL
POST MID-TERM (2024-25)



ARTIFICIAL INTELLIGENCE (843)

Class : XI SCIENCE/COMMERCE/ARTS

Date : 09-01-2024

Admission No.:

Duration : 1 Hr

Max. Marks : 25

Roll No.:

General Instructions:

Try to attempt all questions in the given order.

All questions are compulsory.

The Question Paper is divided into three sections Section A to C.

- Section A has 10 questions and carry 1 mark each.
- Section B has 6 questions and carry 2 marks each.
- Section C has 1 question and carry 3 marks each.

Section-A

1. The term 'Machine Learning' was coined by : 1
(a) Alan Turing (b) John MacCarthy (c) Arthur Samuel (d) Rossum
2. _____ learning mimics the network of neurons in the brain. 1
(a) Machine (b) Deep (c) Reinforcement (d) Supervised
3. Clustering is used to : 1
(a) Predict the category of a new data point.
(b) Organize data points into meaningful groups based on similarities.
(c) Classify data points into predefined categories. (d) Reduce the noise in a dataset.
4. The correlation coefficient (R) can range from: 1
(a) 0 to 1 (b) -1 to +1 (c) -2 to +2 (d) None of the above
5. **Assertion / Reason Questions:** 1
Statement 1: AI is a broad field that encompasses machine learning.
Statement 2: Machine Learning models can only learn from labelled data.
(a) Statement 1 is correct, but statement 2 is incorrect.
(b) Statement 1 is incorrect, but statement 2 is correct.
(c) Both the statements are correct.
(d) Both the statements are incorrect.
6. Statement 1: Unsupervised learning can be used to identify fraudulent transactions on a credit card. 1
Statement 2: Unsupervised learning helps find patterns in unlabeled data.
(a) Statement 1 is correct, but statement 2 is incorrect.
(b) Statement 1 is incorrect, but statement 2 is correct.
(c) Both the statements are correct.
(d) Both the statements are incorrect.

7. Statement 1: Regression analysis can be used to identify causal relationships between variables. 1
Statement 2: Regression models the relationships between a dependent variable and one or more independent variables.
(a) Statement 1 is correct, but statement 2 is incorrect.
(b) Statement 1 is incorrect, but statement 2 is correct.
(c) Both the statements are correct.
(d) Both the statements are incorrect.
8. Statement 1: Classification models are always perfect at predicting the category of a new data point. 1
Statement 2: Classification models learn patterns from training data to make predictions.
(a) Statement 1 is correct, but statement 2 is incorrect.
(b) Statement 1 is incorrect, but statement 2 is correct.
(c) Both the statements are correct.
(d) Both the statements are incorrect.
9. **Competency-Based Question:** 1
Asmita is developing an AI-driven recommendation system for a retail e-commerce platform. What type of machine learning method might she have used to:
a) Train the model with details of past purchases, user interactions, and product ratings ?
b) Identify groups of similar users or products based on their browsing behaviour ?
10. Suppose you are sales manager tasked with forecasting sales for the upcoming quarter. 1
Describe how you would use linear regression in this scenario, including the data you would collect and the steps involved in the analysis.

Section- B

11. Reinforcement Learning is a feedback-based Machine Learning technique in which an agent learns to behave in an environment by performing the actions and seeing the results of actions. Explain with an example. 2
12. Give two advantages and disadvantages of each of Machine Learning. 2
13. Give at-least four applications of Machine Learning in daily life. 2
14. Differentiate between Correlation Coefficient and Regression Coefficient. 2
15. Explain KNN (K-Nearest Neighbour) ? List two advantages and disadvantages of it. 2
16. List the types of Clustering ? Explain each type with example. 2

Section-C

17. Explain K-Means clustering ? List two applications of it. Write two advantages and two dis-advantages of it. 3

***** BEST OF LUCK *****