

HALF YEARLY EXAMINATION, 2024-25

ARTIFICIAL INTELLIGENCE

Time – 2:00 Hrs.

Class – XII

M.M. : 50

Date – 14.09.2024 (Saturday)

Name of the student _____ Section _____

GENERAL INSTRUCTIONS:

- Please read the instructions carefully.
- This Question Paper consists of **29** questions in four sections –**A, B, C & D.**
- Section A and B are **Objective type** questions
- Section C contains **Short Answer type** questions.
- Section D contains **Long Answer type** questions.
- All questions of a particular section must be attempted in the correct order

SECTION-A

Multiple Choice Questions.

(1x14=14 Marks)

- Q1 Narcissistic personality disorder is characterized by which of the following conditions
- People have an inflated sense of their own importance.
 - A deep need for excessive attention.
 - Admiration and lack of empathy.
 - Introvert
- a) Only i b) Both i and ii c) i, ii and iii d) i, ii, iii and iv
- Q2 Self-motivation is important because
- It increases individual's energy and activity.
 - It directs an individual towards specific goals.
 - It results in initiation and persistence of specific activities
 - It affects cognitive processes and learning strategies used for completing similar tasks.
- a) Only i b) Both i and ii c) i, ii and iv d) All of these
- Q3 Which of the following is NOT a step of active listening?
- a) Evaluate b) Receiving c) Post d) feedback
- Q4 What are the characteristics of an ideal message?
- a) Clear b) Concise c) Accurate d) All of these
- Q5 Which of the following is not an example of spreadsheet?
- a) Microsoft Excel b) LibreOfficeCalc c) OpenOffice Impress d) Google Sheets
- Q6 In a spreadsheet software, an arrangement of cells in a vertical manner is known as:
- a) Worksheets b) Workbooks c) Rows d) Columns

- Q7 Identify two AI development tools from the following:
 1) DataRobot 2) Python 3) Scikit Learn 4) Watson Studio
 a) 1 & 2 b) 2 & 3 c) 1 & 3 d) 1 & 4
- Q8 You want to predict future house prices. The price is a continuous value, and therefore we want to do regression. Which loss function should be used here?
 a) RMSE b) MSE c) MAE d) Exponential error
- Q9 The design phase of the AI Model Life Cycle is an _____ process.
 a) Compact b) Iterative c) Periodic d) Permanent
- Q10 Techniques like descriptive statistics and visualisations can be applied to datasets after the original data gathering to analyse the content. To close the gap, additional data collecting may be required. Identify the stage of this analytic approach.
 a) Data Requirements b) Data Gathering c) Data Understanding d) Data Preparation
- Q11 Data Validation for human biases is conducted in _____ phase of AI Model Life Cycle.
 a) Testing b) Data Collection c) Design d) Scoping
- Q12 Hyper parameters are parameters whose values govern the learning process.
 a) True b) False
- Q13 Which of the following is **not** a feature of RMSE?
 a) It tells about the accuracy of the model.
 b) Higher value means hyper parameters need to be tweaked
 c) Lower RMSE values are not good for the AI model.
 d) RMSE is a measure of how evenly distributed residual errors are.
- Q14 A training set is a set of _____ data in which the outcomes are already known.
 a) Current b) Instant c) Historical d) Output

SECTION - B

Multiple Choice Questions.

(2x4=8 Marks)

- Q15 Match the following
- | | |
|----------------------------------|------------------------|
| 1) Which category? | A. (Anomaly Detection) |
| 2) How much or how many? | B. (Regression) |
| 3) Which group? | C. (Recommendation) |
| 4) Is this unusual? | D. (Classification) |
| 5) Which option should be taken? | E. (Clustering) |
- a) 1=D, 2=B, 3=E, 4=A, 5=C b) 1=C, 2=D, 3=B, 4=E, 5=A
 c) 1=D, 2=B, 3=C, 4=E, 5=A d) 1=E, 2=A, 3=D, 4=C, 5=B

Q16 **Assertion (A):** It's crucial to precisely define the strategic business objectives and desired outcomes of the project, select align all the different stakeholders' expectations, anticipate the key resources and steps, and define the success metrics.

Reason (R) : Selecting the AI or machine learning use cases and being able to evaluate the return on investment (ROI) is critical to the success of any data project.

- a) Both (A) and (R) are true and (R) is the correct explanation of (A)
- b) Both (A) and (R) are true and (R) is not the correct explanation of (A)
- c) (A) is true, but (R) is false.
- d) (A) is false, but (R) is true.

Q17 First four steps of wiring Python code to find out RMSE values of the model are given here.

Arrange them in proper order –

- 1. Splitting the data into training and test
 - 2. Reading the data
 - 3. Fitting simple linear regression to the training set.
 - 4. Import required libraries.
- a) 2 – 4 -1 -3 b) 4 – 3 – 2 – 1 c) 1 – 2 – 3 – 4 d) 4 – 2 – 1 – 3

Q18 Which of the following are the objectives of the testing team in AI modelling?

- 1) Model Validation
 - 2) Security compliance
 - 3) Understanding data
 - 4) Minimizing bias
- a) (1), (2) and (3) b) (2), (3) and (4) c) (1), (3) and (4) d) (1), (2) and (4)

SECTION - C

Short Answer Type Question

(2x8=16 Marks)

- Q19 Explain OCEAN acronym of FFM.
- Q20 Differentiate between a row and a cell of a spreadsheet.
- Q21 What is Design Thinking and write its stages with diagram?
- Q22 Give two points of difference between Cross-Validation and Train-Test Split.
- Q23 Name the main stages of AI Project Life Cycle.
- Q24 What is Data Visualization? Mention two Data Visualization techniques.
- Q25 What is Loss function and how many types of Loss function are?
- Q26 What Decomposition provides? Write its components.

SECTION-D

Long Answer Type Question.

(4x3=12 marks)

- Q27 What are the AI development platforms which are used in design and build model (any four category with two examples)?
- Q28 Draw the diagram of Foundational methodology for data science
- Q29 Discuss different type of analytic model

