

NAVODAYA VIDYALAYA SAMITI

SUBJECT: ARTIFICIAL INTELLIGENCE (417)

CLASS XTH

Periodic Test - II (Session 2026-27)

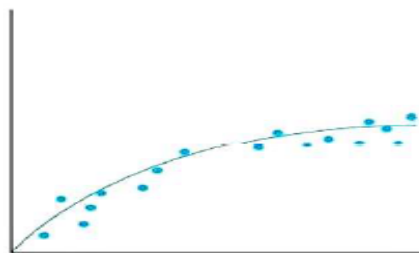
Max. Time Allowed: 01:30 Hrs.

Max. Marks: 40

SECTION – A (OBJECTIVE TYPE QUESTIONS)

(20 x 1 = 20)

1. A receiver hears a message but fails to understand its intended meaning. Which stage has most likely failed?
a) Transmission **b) Decoding** c) Feedback d) Channel selection
2. Ms. Saloni travelled to Sweden from India to pursue her higher education. But she doesn't know how to speak Swedish (language of Sweden). Because of this, she was unable to find a part time job. This is an example of:
a) Interpersonal barrier b) Physical barrier c) Organisational barrier **d) Linguistic barrier**
3. Which of the following best describes about descriptive feedback?
a) It simply tells whether the performance is good or bad.
b) It explains what was done well and/or what needs improvement.
c) It is always given in written form.
d) It is always negative in nature.
4. Which of these is not a benefit of good communication?
a) Better relationships b) Better teamwork **c) More misunderstanding** d) Clear understanding
5. Which type of non-verbal communication is shown by actions like raising a hand to greet or pointing a finger at someone?
a) Facial Expression b) Posture **c) Gesture** d) Eye Contact
6. Predicted data generated from the AI project is known as
a) Testing Data b) Training Data c) Sample Data **d) Predicted Data**
7. Which AI application involves analysing large sets of data to extract meaningful insights for decision-making?
a) Computer Vision b) Robotics c) NLP **d) Data Science**
8. The following diagram indicates:



- a) Classification **b) Regression** c) Positive Reinforcement d) Clustering

9. _____ is a domain of AI related to data systems and processes, in which the system collects numerous data, maintains data sets and derives meaning/sense out of them.
a) Data Science b) Computer Vision c) NLP d) All of the above
10. The stakeholder is determined in which of the following block of 4Ws?
a) what b) where c) who d) why
11. Interpretation of some useful information out of the large data is known as _____.
a) Problem Scoping b) Evaluation c) Data exploration d) Data acquisition
12. Choose the correct option:
a) Classification -> continuous data b) Regression -> discrete data sets
c) Clustering -> unknown data set d) Decision Tree -> Only discrete data
13. Which of the following statements is true about AI Bias?
a) It is always negative. b) It leads to overfitting of training data.
c) It can result in unfair and discriminatory outcomes. d) A machine can have biases of its own.
14. For Data Science, usually the data is collected in the form of tables. These tabular datasets can be stored in different formats. Which of the following formats is not used for storing data in a tabular format?
a) CSV b) Website c) SQL d) Spreadsheet
15. The concept of _____ is used to apply face filters on various social media platforms.
a) NLP b) Computer Vision c) Data Science d) Block Chain Technology
16. An AI recruitment system consistently gives lower scores to candidates from a particular group because its training data contained historical bias. This is an example of:
a) Transparency b) Bias c) Accessibility d) Efficiency
17. In a dataset about students, which can be a feature?
a) Student's age b) Student's final prediction c) AI model d) Computer
18. A dataset contains photographs labelled "Cat" and "Dog". An AI model learns to classify new photographs as either Cat or Dog. This is an example of:
a) Supervised learning b) Unsupervised learning
c) Reinforcement learning d) Data cleaning
19. Which framework focuses on maximum benefit for the greatest number of people?
a) Virtue-based b) Right-based c) Utility-based d) Privacy-based

20. An AI system protects a user's personal information because privacy is a person's right. Which framework is this?

a) Virtue-based

b) Right-based

c) Utility-based

d) None

SECTION – B (SUBJECTIVE TYPE QUESTIONS)

Short Answer type Question (20–30 words)

(6 × 2 = 12)

21. Write any two advantages and disadvantages of Written Communication.

Ans. **Advantages:**

1. It provides a permanent record that can be referred to later.
2. It helps communicate information clearly and systematically.

Disadvantages:

1. It can be time-consuming to prepare.
2. It may cause delays in receiving feedback or clarification.

22. Explain the difference between Data Exploration and Data Acquisition.

Ans.

Data Acquisition	Data Exploration
It is the process of collecting or obtaining data from different reliable sources.	It is the process of examining, understanding and arranging the collected data.
Sources may include surveys, databases, websites, sensors, etc.	It involves finding patterns, trends, relationships and unusual values.
It answers: "Where and how do we get the data?"	It answers: "What does the data tell us?"

23. Explain and draw Problem Statement Template.

Ans. A Problem Statement Template helps us clearly define the problem before developing an AI solution. It identifies the people affected, their problem, the expected solution, and the benefit.

Problem Statement Template with space to fill details according to your Goal:

Our	[stakeholder(s)]	Who
has /have a problem that	[issue, problem, need]	What
when / while	[context, situation]	Where
An ideal solution would	[benefit of solution for them]	Why

24. Define Ethical framework.

Ans. An Ethical Framework is a set of principles and guidelines used to decide what is right, fair, responsible and acceptable while developing or using AI systems. It helps ensure that AI respects privacy, fairness, safety, transparency and human values.

25. Rishika works for a company wherein she was assigned the task of developing a project using AI project cycle. Help her list the stages that she must go through to develop the project.

Ans. The five stages of the AI Project Cycle are:

1. Problem Scoping
2. Data Acquisition
3. Data Exploration
4. Modelling
5. Evaluation
6. Deployment

26. Differentiate between Machine Learning (ML) and Deep Learning (DL).

Ans.

Machine Learning (ML)	Deep Learning (DL)
ML is a broader branch of AI that enables computers to learn from data.	DL is a subset of Machine Learning .
It can work with relatively smaller amounts of data.	It generally requires large amounts of data .
It often requires humans to select or engineer important features.	It can automatically learn features from raw data.
It commonly uses algorithms such as decision trees, linear regression and SVM.	It uses multi-layer neural networks called deep neural networks.
It usually requires less computational power.	It generally requires greater computational power.

Long Answer type Question

(4 × 2 = 8)

27. What is an Artificial Neural Network? Briefly explain all the layers of ANN.

Ans. An Artificial Neural Network (ANN) is a type of Machine Learning model inspired by the working of the human brain. It consists of interconnected nodes called neurons, which process information and learn patterns from data.

Layers of an ANN:

1. Input Layer

- It is the first layer of the neural network.
- It receives input data or features.
- Example: For predicting house prices, inputs may include area, number of rooms and location.

2. Hidden Layer

- These layers process the information received from the input layer.
- An ANN can have one or more hidden layers.
- Neurons in these layers identify patterns and relationships in the data.

3. Output Layer

- It is the final layer of the ANN.
- It provides the final prediction or result.
- Example: It may output **“Yes” or “No”**, or a predicted house price.

28. Explain the following with example:

i) Classification Model: A Classification Model is an AI/ML model that categorizes data into predefined classes or categories.

Example: An email classification model can classify emails as: Spam or Not Spam

ii) Association Rule Model: An Association Rule Model is used to discover relationships or patterns between different items in a dataset.

Example: In a supermarket, analysis may show that customers who buy **bread** often also buy **butter**.

*****ALL THE BEST*****

