



Delhi Public School, Howrah

PERIODIC ASSESSMENT I (2024-2025)

CLASS – X

Care must be taken not to write anything on the question paper. All the questions must be attempted in the correct sequence.

SUBJECT: ARTIFICIAL INTELLIGENCE (SUBJECT CODE 417)

THEORY EXAMINATION

Time Allowed:-1 Hour

F.M.-25

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of **15 questions** in two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. **Out of the given (3 + 12 =) 15 questions, a candidate has to answer (3 + 6 =) 9 questions in the allotted (maximum) time of 1 hour.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (11 MARKS):**
 - i. This section has 03 questions.
 - ii. Marks allotted are mentioned against each question/part.
 - iii. There is no negative marking.
 - iv. Do as per the instructions given.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (14 MARKS):**
 - i. This section has 12 questions.
 - ii. A candidate has to do 6 questions.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.

SECTION A: OBJECTIVE TYPE QUESTIONS

Q. 1	Answer any 3 out of the given 4 questions on Employability Skills (1 x 3 = 3 marks)	
i.	Which type of communication includes use of graphs, charts, maps etc.? (a) Oral (b) Written (c) Non-verbal (d) Visual	(1)
ii.	What kind of feedback supports learning by providing elaborate suggestions? (a) Specific (b) Descriptive (c) Positive (d) Non-specific	(1)
iii.	Today's world is so competitive that a student is always under the stress of assignment submission, performance in exams etc. This kind of stress is a – (a) Physical stress (b) Social stress (c) Mental stress (d) Peer stress	(1)
iv.	_____ is the most important characteristic of directing oneself towards the right direction and making every passing minute as productive as possible. (a) Responsibility (b) Time Management (c) Adaptability (d) Positivity	(1)

Q. 2	Answer any 4 out of the given 6 questions (1 x 4 = 4 marks)	
i.	Which of the following intelligence deals with the ability of people to evaluate their own strengths and weaknesses, and regulate their thoughts. (a) Interpersonal Intelligence (b) Naturalist Intelligence	(1)

	(c) Existential Intelligence	(d) Intrapersonal Intelligence	
ii.	_____ is a subset of AI that enables systems to learn automatically from experience or past information. (a) Deep Learning (b) Machine Learning (c) Computer Vision (d) Natural Language Processing		(1)
iii.	_____ is trained with vast amount of data and has the ability to learn from unstructured or unlabeled data. (a) Deep Learning (b) Machine Learning (c) Computer Vision (d) Natural Language Processing		(1)
iv.	Which of the following is not an example of NLP? (a) Siri (b) Alexa (c) Facelock APP (d) Chatbots		(1)
v.	The wide scale adoption of AI systems can lead to increase in _____ inequalities. (a) biased (b) ethical (c) income (d) all of these		(1)
vi.	Which of the following options is the most serious concern of AI systems related to data? (a) Relevant data (b) Irrelevant data (c) Biased data (d) Unbiased data		(1)

Q. 3	Answer any 4 out of the given 6 questions (1 x 4 = 4 marks)		
i.	Which of the following terms refers to a set of inputs and outputs required to achieve a predetermined or specific goal? (a) Project plan (b) Project (c) Project Life Cycle (d) IPO Cycle		(1)
ii.	_____ stage is followed by programmers to write about the nature and boundaries of a problem. (a) Problem Scoping (b) Data Exploration (c) Data Acquisition (d) Problem Solving		(1)
iii.	Which approach is not used in AI systems? (a) Rule Based Approach (b) Learning Based Approach (c) Adaptive Intelligence Approach (d) Situational Intelligence Approach		(1)
iv.	In _____ learning, machine gets trained with unlabelled data and learns with its past experience and user feedback. (a) Supervised (b) Unsupervised (c) Reinforcement (d) Semi-Supervised		(1)
v.	_____ technique is used to convert the higher dimensions dataset into lesser dimensions. (a) Classification (b) Regression (c) Clustering (d) Dimensionality Reduction		(1)
vi.	From which of the following are Knowledge Base and Inference engine part of? (a) Rule-based (b) Learning-based (c) Data-based (d) Neural network based		(1)

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 2 out of the given 4 questions on Employability Skills (2 x 2 = 4 marks)

Answer each question in 20 – 30 words.

Q. 4	Define the terms (i) Encoding and (ii) Feedback associated with communication channel.	(2)
Q. 5	Samrat is preparing for an interview in a multi-national AI based company. He was going through the basics of communication skills that may help him face the interview board confidently. Explain any two barriers of effective communication in this regard.	(2)
Q. 6	Sejal is a JEE aspirant and she is going to appear for JEE just after her board exams. She spoke to her parents regarding proper self-management guidance as she is getting much nervous and finding it tough to manage studies. Discuss two useful characteristics of self-management for students in such stressful scenarios.	(2)
Q. 7	Define the term stress. Discuss two stress management techniques for students.	(2)

Answer any 3 out of the given 5 questions in 20 – 30 words each (2 x 3 = 6 marks)

Q.8	Define the term Artificial Intelligence. Discuss two features of Intelligence.	(2)
Q.9	Artificial intelligence is a ground-breaking technology and offers a series of benefits in almost every sector in existence surrounding us. Explain the applications of AI in healthcare and manufacturing industry.	(2)
Q.10	“Data collection is one of the most serious by-products of AI systems. It comes under the category of privacy concerns”. Comment your views on the given statement.	(2)
Q.11	Differentiate between Classification and regression methods of Supervised Learning with their respective diagrams.	(2)
Q.12	Deep learning is a subfield of machine learning, which itself is a subfield of AI. Neural Network is an example of the deep learning technology. Explain Neural Network in brief.	(2)

Answer any 1 out of the given 3 questions in 50 – 80 words (4 x 1 = 4 marks)

Q.13	Sunidhi is an AI expert and she is the team leader in her project team. The project Sunidhi is working on has reached the modelling phase after meeting all the requirements of the phases that precedes modelling. What are the two major approaches used in the AI project modelling phase? Explain them in brief. Define the terms knowledge base and inference engine in this regard.	(4)
Q.14	Sumedh is a farmer. He always collected and evaluated a large amount of data with each growing season such as seeds planted, inputs applied, crops harvested etc. Which domain of AI can be used to analyse the data accurately and speedily, so that the meaningful insights could be given to help him make critical, timely and advantageous decisions. Identify the domain and explain elaborately.	(4)
Q.15	Rupa is running a food outlet and has an app for it. She needs a chatbot for the app which would be able to give personalized chat experience to customers. What type of learning approach among rule-based and learning-based does she need to use for creating the chatbot? Identify the type of chatbot and explain it elaborately.	(4)