



INDIAN SCHOOL AL WADI AL KABIR

PRE-MID TERM EXAMINATION 2025-26

ARTIFICIAL INTELLIGENCE (402)

MARKING SCHEME

Class: X

Date: 25-05-2025

Max Marks: 30

Time: 1 Hours

SECTION A: OBJECTIVE TYPE QUESTIONS

	Answer all the questions (1 x 14 =14 marks)	
1	c. Non-Verbal	1
2	c. Face-to-face conversation	1
3	b. Interpersonal Barrier	1
4	d. e-mail	1
5	a. Object: a tree; Verb: crashed; Subject: the car	1
6	c. Computer vision	1
7	c. Dealing with the interaction between computers and humans using natural language	1
8	d. None of these	1
9	d. Virtue based	1
10	a. Both Assertion and Reasoning are true, and Reasoning is the correct explanation of the Assertion.	1
11	b. Overfitting	1
12	d. All AI domains	1
13	b. Selecting the AI algorithm to train the model	1
14	c. Collecting and organizing relevant data from various sources	1

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 4 out of the given 6 questions (2 x 4 = 8 marks)

Answer each question in 20 – 30 words.

Q. 15	The various elements of the communication cycle are: <ul style="list-style-type: none">• Sender: the person beginning the communication.• Message: the information that the sender wants to convey.• Channel: the means by which the information is sent.• Receiver: the person to whom the message is sent.• Feedback: the receiver's acknowledgment and response to the message.	2
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Q. 16	Types of Sentences					2
	Statement or Declarative Sentence	Question or Interrogative Sentence	Emotion/Reaction or Exclamatory Sentence	Order or Imperative Sentence		
	<ul style="list-style-type: none">Provides information or states a fact.Always ends with a 'full-stop' ('.').	<ul style="list-style-type: none">Asks a question.Always ends with a question mark ('?').	<ul style="list-style-type: none">Expresses a strong emotion.Always ends with an exclamation mark ('!').	<ul style="list-style-type: none">Shows an order, command, request or advice.Can end with a full stop or an exclamation mark ('.' or '!').		
	(0.5 mark for each type)					
Q. 17	Alphabet	T	I	N	S	2
	What it shows:	Titles	word 'I'	Names	Starting letter of sentences	
	Rule	Capitalise the first letter in the titles used before people's names.	Capitalise the letter 'I' when it is used as a word (Pronoun).	Capitalise the first letter in the names of people, places, days and months.	Capitalise the first letter in every sentence.	
	Example	Dr Malik and Mr Pandey were invited to the party.	He said that I should accompany him to the mall.	The summer break is starting this Friday and will continue till the end of June. Suresh is planning to visit London next year.	The little girl lost her book.	
Q. 18	Value-based frameworks focus on fundamental ethical principles and values guiding decision-making. It reflects the different moral philosophies that inform ethical reasoning. Value-based frameworks are concerned with assessing the moral worth of actions and guiding ethical behaviour.					2
Q. 19	<p>Non-maleficence" refers to the ethical principle of avoiding causing harm or negative consequences. It emphasizes the obligation to minimize harm as much as possible and prioritize actions that prevent harm to individuals, communities, or the environment.</p> <p>Beneficence" refers to the ethical principle of promoting and maximizing the well-being and welfare of individuals and society. It emphasizes taking actions that produce positive outcomes and contribute to the overall good, ensuring that the greatest benefit is achieved for all stakeholders involved.</p>					2
Q. 20	<p>Email filters: Email filters are one of the most basic and initial applications of NLP online. It started with spam filters, uncovering certain words or phrases that signal a spam message.</p> <p>Machine Translation: NLP is used in machine translation systems like Google Translate and Microsoft Translator to automatically translate text from one language to another. These systems analyze the structure and semantics of sentences in the source language and generate equivalent translations in the target language.</p>					2

Answer any 2 out of the given 3 questions in 50– 80 words each (4x 2 = 8 marks)

Q. 21	<p>The steps involved in AI project cycle are as given:</p> <p>The first step is Scope the Problem by which, you set the goal for your AI project by stating the problem which you wish to solve with it. Under problem scoping, we look at various parameters which affect the problem we wish to solve so that the picture</p>	4
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	<p>becomes clearer</p> <ul style="list-style-type: none"> • Next step is to acquire data which will become the base of your project as it will help you in understanding what the parameters that are related to problem scoping. • Next, you go for data acquisition by collecting data from various reliable and authentic sources. Since the data you collect would be in large quantities, you can try to give it a visual image of different types of representations like graphs, databases, flow charts, maps, etc. This makes it easier for you to interpret the patterns in which your acquired data follows. • After exploring the patterns, you can decide upon the type of model you would build to achieve the goal. For this, you can research online and select various models which give a suitable output. • You can test the selected models and figure out which is the most efficient one. • The most efficient model is now the base of your AI project and you can develop your algorithm around it. • Once the modelling is complete, you now need to test your model on some newly fetched data. The results will help you in evaluating your model and hence improving it. • Finally, after evaluation, the deployment stage is crucial for ensuring the successful integration and operation of AI solutions in real-world environments, enabling them to deliver value and impact to users and stakeholders. 	
Q. 22	<p>Bioethics is an ethical framework used in healthcare and life sciences. It deals with ethical issues related to health, medicine, and biological sciences, ensuring that AI applications in healthcare adhere to ethical standards and considerations.</p> <p>Principles of bioethics:</p> <p>a) Respect for Autonomy. Enabling users to be fully aware of decision-making. E.g., users of an AI algorithm should know how it functions</p> <p>b) Do not harm: Harm to anyone (be it human or non-human) must be avoided at all costs. If no choice is available path of least harm must be always chosen.</p> <p>c) Ensure maximum benefit for all: Not only should we avoid harm our actions must focus on providing the maximum benefit possible. The solution should be held to clinical practice standards, not merely technological ethics standards.</p> <p>d) Give justice: All benefits and burdens of a particular choice must be distributed in a justified manner across people irrespective of their background.</p>	4
Q. 23	<pre> graph TD A[Ethical Frameworks for AI] --> B[Sector based] A --> C[Value based] B --> D[Bioethics – for application in healthcare] C --> E[Rights – Human life is valued over others] C --> F[Utility – what offers more good than harm] C --> G[Virtue – are my actions consistent with my beliefs?] </pre>	4

Ethical frameworks for AI can be categorized into two main types: sector-based and value-based frameworks.

1. Sector-based Frameworks:

These are frameworks tailored to specific sectors or industries. In the context of AI, one common sector-based framework is Bioethics, which focuses on ethical considerations in healthcare. It addresses issues such as patient privacy, data security, and the ethical use of AI in medical decision-making. Sector-based ethical frameworks may also apply to domains such as finance, education, transportation, agriculture, governance, and law enforcement.

2. Value-based Frameworks:

Value-based frameworks focus on fundamental ethical principles and values guiding decision-making. It reflects the different moral philosophies that inform ethical reasoning. Value-based frameworks are concerned with assessing the moral worth of actions and guiding ethical behaviour.

(2 mark for diagram. 1 mark for each type explanation)

*****BEST WISHES*****