KENDRIYA VIDYALAYA SANGTHAN, RAIPUR REGION
FIRST PRE-BOARD EXAM (2025-26)
MARKING SCHEME
CLASS:X
SUB: ARTIFICIAL INTELLIGENCE (417)

Q. 1	Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)	
i.	c) Financial barrier	1
ii.	Measurable	1
iii.	(b) https://	1
iv	(b) Entrepreneurship	1
v.	(d) Sustainable practice	1
vi.	(a) Both A and R are true, and R is the correct explanation of A.	1

Q. 2	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	(c) Ethical AI principles	1
ii.	(b) Problem scoping	1
iii.	(C) Regression	1
iv	(b) F1 Score	1
v.	(b) Computer Vision	1
vi.	(c) Lexical Analysis	1

Q. 3	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	(b) Modelling	1
ii.	(b) Stop words	1
iii.	(c) Can be less efficient for large datasets.	1
iv	(d) (i) and (iv)	1
v.	(a) True Positive	1
vi.	(a) Both A and R are true and R is the correct explanation for A	1

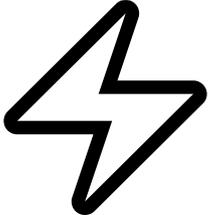| Q. 4	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	(c) Aligning actions with ethical principles and beliefs	1
ii.	(d) Grouping similar data points	1
iii.	(c) Classification	1
iv	(c) Directly proportional	1
v.	(a) By the number of pixels along the width and height, such as 1280x1024	1
vi.	(a) Care	1

Q. 5	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	(c) Bag of words	1
ii.	(b) Deep Neural Network	1
iii.	b. Accuracy	1

iv	(b) 0 to 255	1
v.	(d) Document summarization	1
vi.	a) Both A and R are true, and R is the correct explanation of A.	1

SECTION B: SUBJECTIVE TYPE QUESTIONS

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

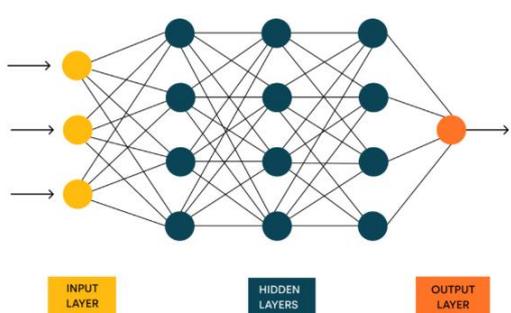| Q. 6	 No Littering — Place: Park Restroom — Place: Airport No Smoking — Place: Petrol Pump High Voltage — Place: Transformer *1/2 Marks for each sign*	2
Q. 7	• **Time Management:** Make a daily timetable with fixed study hours and short breaks, and stick to it strictly. • **Limit Distractions:** Switch off mobile notifications or keep the phone away while studying. • **Set Small Goals:** Break the syllabus into smaller tasks (e.g., 2 chapters per day) and reward himself after completing them. • **Prioritize Tasks:** Do the most important or difficult subjects first when his concentration is highest. • **Practice Self-Discipline:** Use self-reminders (sticky notes, alarms) to stay on track. *1 Mark allotted for one suggestion, if other relevant suggestion given by student than marks should be given*	2
Q. 8	Trojan Horse: *(1 Marks)* It is malicious software/program (malware) that looks like a useful/harmless but secretly performs harmful activities. *(1 Mark)*	2
Q. 9	• They are confident. They believe in themselves and their abilities. • They keep trying new ideas in their business. • They are patient. • They are creative and think differently about business ideas. • They take responsibility for their actions. • They make decisions after thinking about them. • They work hard. • They do not give up when they face a difficulty *1 mark for each point*	2
Q. 10	• *Be helpful to one another.* • *be friendly with everyone* • *Provide quality education to all, especially to disadvantaged groups.* • *Create fair employment for women, youth, and marginalized communities.*	2

- *Ensure welfare schemes for poor, elderly, and differently-abled.*
- *Equal pay for equal work, regardless of gender or background.*
- *Encourage representation of weaker sections in decision-making.*

1 mark for one point

Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)

Q. 11	The two most important steps are: • Problem Scoping (1/2) • Data Acquisition (1/2) Problem Scoping: Understanding the problem (1/2) Data Acquisition: Collecting accurate and reliable data (1/2)	2
Q. 12	**Fairness** – Ensures equal opportunity for all genders. **Accuracy** – Biased data gives wrong predictions and poor hiring decisions. **Legal & Ethical Reasons** – Prevents discrimination and follows workplace laws. **Trust** – Builds confidence among applicants and stakeholders in the AI system. **Diversity** – Encourages a balanced workforce, which improves creativity and productivity. *1 mark for each point(consider any relevant point based on removal of biasness)*	2
Q. 13	a) Classification b) Regression c) Clustering d) Association Model 1/2 Marks for each correct answer	2
Q. 14	(see table below) *1/2 marks for each cell value.*	2
Q. 15	**Computer Vision:** It is a field of Artificial Intelligence that enables machines to interpret and process visual information from the world, such as images and videos. **Application:** A real-life application is facial recognition used in smartphone security systems. *1 Mark for explanation* *1 Mark for application*	2
Q. 16	(see table below)	2

Q. 14:

Confuse Matrix		Reality	
		True/ Positive	False/ Negative
Predicted	True/ Positive	TP 40	FP 30
	False/ Negative	FN 30	TN 920

Q. 16:

Script Bot	Smart Bot
1. Script bots are easy to make	1. Smart bots are flexible and powerful
2. Script bots work around a script that is programmed in them ie. Rule based chatbot	2. Smart bots work on bigger databases and other resources directly.

	3. Mostly they are free and are easy to integrate into a messaging platform	3. Smart bots learn with more data	
	4. No or little language processing skills	4. Coding is required to take this up on board. Works on AI algorithms	
	5. Task based rules	5. Context based AI	
	6. Limited functionality	6. Wide functionality	
	7. Example: the bots which are deployed in the customer care section of various companies	7. Example: Google Assistant, Alexa, Cortana, Siri, etc.	

1 Marks for each difference

Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)

Q. 17	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.
	Principles of bioethics:
	  • Respect for Autonomy.
	  • Do not harm.
	  • Ensure maximum benefit for all.
	  • Give justice.
	
	2 Marks for Bioethics explanation
	1/2 mark for each principle
		4

Q. 18	I. Supervised Learning
	     Reason: Labelled dataset (fraudulent / legitimate) it is classification problem.
	II. Unsupervised Learning
	     Reason: No labels, grouping users into clusters.
	III. Reinforcement Learning
	     Reason: Learning through trial-and-error with reward/penalty feedback.
	IV. Unsupervised Learning
	     Reason: No predefined labels it is clustering or grouping of products.
	
	     1/2 Marks for each correct answer
	     1/2 Marks for each reason
		4

Q. 19	An Artificial Neural Network (ANN) is a model inspired by the human brain. It consists of layers of interconnected nodes ("neurons") that process information. • Input Layer:	4

	The job of an input layer is to acquire data and feed it to the Neural Network.	

	• Processing/Hidden Layer
	    Each node of these hidden layers has its own machine learning algorithm which it executes on the data received from the input layer.
	• Output Layer
	    Produces final prediction/output
	
	1 Mark for definition (if figure not mandatory)
	1 Marks for each layer	

Q. 20	Text normalisation is the process of transforming a text into a canonical (standard) form, e.g. the word "gooood" and "gud" can be transformed to "good". • Sentence Segmentation • Tokenization • Removing Stop words, Special Characters and Numbers • Converting Text to a Common Case • Stemming • Lemmatization *1 Mark for explanation* *1/2 Marks for each step name*	4

Q. 21	Accuracy = (TP + TN) / (TP + TN + FP + FN)
	          = (80 + 850) / (80 + 850 + 30 + 40)
	           = 930 / 1000
	            = 0.93 or 93%
	
	Precision = TP / (TP + FP)
	          = 80 / (80 + 30)
	           = 80 / 110
	           = 0.727 or 72.7%
	
	Recall = TP / (TP + FN)
	           = 80 / (80 + 40)
	           = 80 / 120
	            = 0.667 or 66.7%
	
	F1-score = 2 × (Precision × Recall) / (Precision + Recall)
	            = 2 × (0.727 × 0.667) / (0.727 + 0.667)
	            = 2 × 0.485 / 1.394
	            = 0.970 / 1.394
	            = 0.696 or 69.6%
	
	1/2 Marks for each correct formula
	1/2 Marks for each correct calculation
		4