CBSE | DEPARTMENT OF SKILL EDUCATION

ARTIFICIAL INTELLIGENCE (SUBJECT CODE 417)

CLASS X (SESSION 2021-2022)
SAMPLE QUESTION PAPER FOR TERM -1

Max. Time Allowed: 1 Hour **Max. Marks: 25**

General Instructions:

1. Please read the instructions carefully
2. This Question Paper is divided into 03 sections, viz., Section A, Section B and Section C.
3. Section A is of 05 marks and has 06 questions on Employability Skills.
4. Section B is of 15 marks and has 20 questions on Subject specific Skills.
5. Section C is of 05 marks and has 07 competency-based questions.
6. Do as per the instructions given in the respective sections.
7. Marks allotted are mentioned against each section/question.
8. All questions must be attempted in the correct order

SECTION A

Answer any 5 questions out of the given 6 questions on Employability Skills (1 x 5 = 5 marks)

1.	Some American and Israeli managers were on a conference call. The topic of the call was transitioning from an on-premise product to a cloud-native product. In the middle of the discussion, one Israeli manager said that the R&D staff in Israel 'don't care' about some of the changes. An American manager, although usually polite, couldn't restrain himself when he heard that statement. "What's that supposed to mean, they DON'T CARE??" he thundered. This is an example of a) Organisational Barrier b) Interpersonal Barrier c) Linguistic Barrier d) Cultural Barrier	**1**
2.	Identify the object, verb and subject in the sentence, 'The car crashed into a tree.' a) Object: a tree; Verb: crashed; Subject: the car b) Object: The car; Verb: crashed; Subject: a tree c) Object: crashed; Verb: the tree; Subject: the car d) Object: crashed; Verb: the car; Subject: the tree	**1**

3.	There was a young boy who was fond of playing football and wanted to become a football player. He joined a football academy and came regularly to practice but never made it to the team. For four days, the boy didn't show up for practice. The matches had begun and his team was playing the finals. He showed up for the finals. He went up to the coach and pleaded him to let him play for the match. The coach had never seen the boy plead like this before. The Game started and the boy played like a ball on fire. Every time he got the ball, he shot a goal. Needless to say, he was the star of the game and his team won. What type of motivation did the boy demonstrate? a) External b) Internal c) Both internal and external d) Not any specific type of motivation	**1**
4.	Statement 1: A realistic goal is one that has no timeline or plans for execution. Statement 2: Breaking down big goals into smaller parts will make the goal achievable. a) Both Statement I and Statement II are correct b) Both Statement I and Statement Il are incorrect c) Statement I is correct but Statement II is incorrect d) Statement I is incorrect but Statement II is correct	**1**
5.	Here are the steps that take place when starting a computer. Rearrange the steps in the correct order. i) Desktop appears after login ii) Login screen appears iii) Power on Self-Test (POST) starts iv) Operating system starts v) Welcome screen appears a) i) -> ii) -> iii) -> iv) -> v) b) ii) -> iv) -> iii) -> v) -> i) c) iii) -> iv) -> v) -> ii) -> i) d) iii) -> v) -> iv) -> ii) -> i)	**1**
6.	Which one of the following is an example of Operating System? a) Microsoft Word b) Microsoft Windows c) Microsoft Excel d) Microsoft Access	**1**

SECTION B

Answer any 15 questions out of the given 20 questions **(1 x 15 = 15 marks)**

7.	Which of the following is correct about the rule based approach? a) We cannot provide enough rules to the machine. b) A drawback/feature for this approach is that the learning is static. c) Once the rules are fed into the system, it takes into consideration any changes made in the original training dataset. d) It can improve itself based on the feedbacks.	**1**
8.	Choose the five stages of AI project cycle in correct order a) Evaluation -> Problem Scoping -> Data Exploration -> Data Acquisition -> Modelling b) Problem Scoping -> Data Exploration -> Data Acquisition -> Evaluation -> Modelling c) Data Acquisition -> Problem Scoping -> Data Exploration -> Modelling -> Evaluation d) Problem Scoping -> Data Acquisition -> Data Exploration -> Modelling -> Evaluation	**1**
9.	Unscramble the letters and find the name the first humanoid robot with a citizenship a) TERBHER OXEVE b) IAOHSP c) IRIS d) ACTROAN	**1**
10.	When a machine possesses the ability to mimic the following human traits, it is said to have artificial intelligence. Identify the positive traits that an AI machine should possess. i. make decisions ii. bias iii. predict iv. learn and improve on its own a) i), and iii) only b) i) , iii) and iv) only c) ii) and iv) only d) i) ,ii), and iv) only	**1**
11.	Assertion(A) : Neural networks are the backbone of deep learning algorithms Reason(R): Neural networks use vast amounts of data a) Both A and R are correct and R is the correct explanation of A b) Both A and R are correct but R is NOT the correct explanation of A c) A is correct but R is not correct d) A is not correct but R is correct.	**1**

12.	A business problem wherein we categorize whether an observation is “Safe,” “At-Risk,” or “Unsafe” is an example of a) Classification b) Clustering c) Regression d) Dimensionality Reduction	**1**
13.	_____ helps us to summarise all the key points into one single outline so that in future, whenever there is need to look back at the basis of the problem, we can take a look at it and understand the key elements of it. a) 4W Problem canvas b) Problem Statement Template c) Data Acquisition d) Algorithm	**1**
14.	Tom is a student of grade five. He likes to move constantly at his desk. He plays with pencils and taps his fingers, stands up in his place any time he gets a chance. He enjoys playing basketball, and likes to play in the classroom. Which of the following intelligence does he demonstrate? a) Linguistic b) Logical-Mathematical c) Musical d) Kinesthetic	**1**
15.	The basis of decision making depends upon i) availability of information ii) past experience iii) positive attitude iv) self-awareness a) i) and ii) b) ii) and iv) c) i), ii) and iv) d) i), ii) and iii)	**1**
16.	Unscramble the letters and find the correct answer DATA + _____ = AI MACHINE a) SMEGSEA b) IMLHOMRGAT c) RROER d) TSMMCOE	**1**
17.	Infrared sensors detect infrared energy that is emitted by one's body heat. When hands are placed in the proximity of the sensor, the infrared energy quickly fluctuates. This fluctuation triggers the pump to activate and dispense the designated amount of sanitizer. This is an example of a) Automated machine b) AI machine c) Semi-automatic machine d) Deep Learning machine	**1**

18.	Match Column A with Column B: **Column A** **Column B** 1. Face recognition machine (i) Not AI 2. Automatic door (ii) AI 3. Gesture recognition 4. Automatic toy car a) 1 -> (i) ; 2 -> (ii) ; 3 -> (i) ; 4 -> (ii) b) 1 -> (ii) ; 2 -> (i) ; 3 -> (ii) ; 4 -> (i) c) 1 -> (i) ; 2 -> (i) ; 3 -> (ii) ; 4 -> (i) d) 1 -> (ii) ; 2 -> (i) ; 3 -> (i) ; 4 -> (ii)	**1**
19.	Assertion(A): Anyone can kick an artificially intelligent machine Reason (R): They have no pain receptors a) Both A and R are correct and R is the correct explanation of A b) Both A and R are correct but R is NOT the correct explanation of A c) A is correct but R is not correct d) A is not correct but R is correct.	**1**
20.	If Data is represented as "Answer", Processing is represented as "Data" and Answer is represented as "Processing", which of the following can be related to the description of layers in a neural network? Choose the correct options a) Input Layer -> Data; Output layer -> Processing; Hidden Layer -> Answer b) Input Layer -> Processing; Output layer -> Data; Hidden Layer -> Answer c) Input Layer -> Answer; Output layer -> Processing; Hidden Layer -> Data d) Input Layer -> Answer; Output layer ->Data; Hidden Layer -> Processing	**1**
21.	Which of the following is incorrect? i) Testing data is the one on which we train and fit our model basically to fit the parameters ii) Training data is used only to assess performance of model iii) Testing data is the unseen data for which predictions have to be made a) i) and iii) only b) i) and ii) only c) ii) and iii) only d) i), ii) and iii)	**1**
22.	Unscramble the letters and find the parameter that is NOT used in evaluation stage a) CMVETEEHAIN b) ONSIPRICE c) RYAUACCC d) ECLARL	**1**

23.	Assertion (A): We can use histograms when data is in categories (such as "Pop","Rock",”Jazz”,”Hip-Hop” etc) Reason (R): We use bar charts when we have continuous data (such as a person's height or weight) a) (A) is false but (R) is true b) (A) is true but (R) is false c) Both (A) and (R) are true d) Both (A) and (R) are false	**1**
24.	Which of the following is true about neural networks? a) Neural Networks tend to perform better with larger amounts of data. b) Neural Networks tend to perform poorer with larger amounts of data. c) Neural Networks tend to perform better with smaller amounts of data. d) Neural Networks need no data	**1**
25.	Choose the correct option a) Unsupervised learning ->labelled dataset, Regression b) Supervised learning -> labelled data set, Regression c) Unsupervised learning ->unlabelled dataset, Classification d) Supervised learning -> unlabelled data set, Regression	**1**
26.	Google Translate is Google's free service that instantly translates words, phrases, and web pages between English and over 100 other languages. Google translate uses ----- a) 4w problem canvas b) Neural Networks c) KWLH chart d) System maps	**1**

SECTION C
(COMPETENCY BASED QUESTIONS)

Answer any 5 questions out of the given 7 questions **(1 x 5 = 5 marks)**

27.	Assume that you are working at **MyFlight** which is a major airlines company and that you have noticed that the way passengers board your planes is an inefficient use of time and resources. On an average, the current boarding system wastes about four minutes per boarding. This wastes about 35000 rupees per day across all flights. The boarding protocols make the company less competitive and thus create an unfavourable brand image. Using a modified boarding, passengers can board the plane from the sides rather than from the back to the front. This will eliminate four minutes of waste. Taking this as the problem, choose which of the following would be the ideal problem statement template.	**1**

	a) Our passengers have a problem that it takes more time when one has to board the plane. An ideal solution would be to use different airlines. b) Our passengers have a problem that the current boarding system wastes time while waiting in the airport. An ideal solution would be to board the plane before the airline crew gets into the plane. c) Our airlines have a problem that the current boarding system wastes four minutes of time when passengers aboard the plane. An ideal solution would be to board the plane from the sides rather than from the back to the front. d) Our airlines have a problem that it takes more time when passengers have to board the plane. An ideal solution would be to sell the airlines.	
28.	*a. Understand and inspect the web page to find the HTML markers associated with the information we want.* *b. Use Python libraries to pull out data from the HTML page.* *c. Manipulate the collected data to get it in the form we need.* The above given steps are for collecting data from which of the following data sources? a) Cameras b) Sensors c) Surveys d) Web scraping	**1**
29.	A leading multinational company operates on a chain of hypermarkets and grocery stores deployed an AI application to make it easier for employees to keep their stores running smoothly. They used thousands of video cameras, weighted sensors on shelves, and other technologies that can tell employees when certain products is starting to go bad. One of the task of the application is to identify bananas that had started to turn brown, eliminating the need for employees to manually inspect fruit. Which of the following domain is used to achieve this? a) Data sciences b) Computer vision c) Natural Language Processing d) Fuzzy logic	**1**
30.	An AI system uses two broad classes of data namely content data which includes the raw video streams title, description, etc, and user activity data that includes rating a video, favoriting/liking a video, or subscribing to an uploader, and watch time. Based on this, the AI system measures a user's engagement and happiness. It then starts computing personalized recommendations to the user. Which of the following applications can you relate to this? a) self-driving car b) Siri c) email filters d) YouTube	**1**
31.	Data about the houses such as square footage, number of rooms, features, whether a house has a garden or not, and the prices of these houses, i.e., the corresponding labels are fed into an AI machine. By leveraging data coming from thousands of houses, their features and prices, we can now train the model to predict a new house's price. This is an example of a) Reinforcement learning b) Supervised learning c) Unsupervised learning d) None of the above	**1**

32.	A scenario is given to you below. Read it and answer the questions that follow: Late one night, a car ran over a pedestrian in a narrow by street and drove away without stopping. A policeman who saw the vehicle leave the scene of the accident reported it moving at very high speed. The accident itself was witnessed by six bystanders. They provided the following conflicting accounts of what had happened: - It was a Toyota and its headlights were turned off; - It was a grey Audi. - It was a red car driven by a woman; - The car was moving at high speed and its headlights were turned off; - The car did have license plates; it wasn't going very fast; - The car didn't have license plates; the driver was a man; When the car and its driver were finally apprehended, it turned out that only one of the six eyewitnesses gave a fully correct description. Each of the other five provided one true and one false piece of information. Keeping that in mind, can you determine the following: i) What was the car's brand? ii) What was the colour of the car? iii) Was the car going fast or slow? iv) Did it have license plates? v) Were its headlights turned on? vi) Was the driver a man or a woman? a) i) -> TOYOTA ; ii) -> GREY ; iii) -> FAST ; iv) -> NO ; v) -> NO ; vi) -> WOMAN b) i) -> AUDI ; ii) -> RED ; iii) -> SLOW ; iv) -> NO ; v) -> YES ; vi) -> WOMAN c) i) -> AUDI ; ii) -> RED ; iii) -> FAST ; iv) -> YES ; v) -> NO ; vi) -> MAN d) i) -> TOYOTA ; ii) -> RED ; iii) -> SLOW ; iv) -> NO ; v) -> NO ; vi) -> MAN	**1**
33.	Amazon had been working on a secret AI recruiting tool. The machine-learning specialists uncovered a big problem: their new recruiting engine did not like women. The system taught itself that male candidates were preferable. It penalized resumes that included the word "women". This led to the failure of the tool. This is an example of a) Data Privacy b) AI access c) AI Bias d) Data Exploration	**1**

CLASS X (SESSION 2021-2022)
MARKING SCHEME FOR TERM -1

SECTION A

		Marks
1.	Ans: c	**1**
2.	Ans : a	**1**
3.	Ans : b	**1**
4.	Ans : d	**1**
5.	Ans: c	**1**
6.	Ans : b	**1**

SECTION B

7.	Ans : b	**1**
8.	Ans : d	**1**
9.	Ans : b	**1**
10.	Ans : b	**1**
11.	Ans : a	**1**
12.	Ans : a	**1**
13.	Ans : b	**1**
14.	Ans : d	**1**
15.	Ans : c	**1**
16.	Ans : b	**1**
17.	Ans : a	**1**
18.	Ans : b	**1**
19.	Ans : d	**1**
20.	Ans : c	**1**
21.	Ans : b	**1**
22.	Ans : a	**1**
23.	Ans : d	**1**
24.	Ans : a	**1**
25.	Ans : b	**1**
26.	Ans : b	**1**

SECTION C
(COMPETENCY BASED QUESTIONS)

27.	Ans : c	**1**
28.	Ans : d	**1**
29.	Ans : b	**1**
30.	Ans: d	**1**
31.	Ans : b	**1**
32.	Ans : c	**1**
33.	Ans : c	**1**