



Class-10
ARTIFICIAL INTELLIGENCE (417)

Max. Time: 2 Hours

Max. Marks: 50

General Instructions:

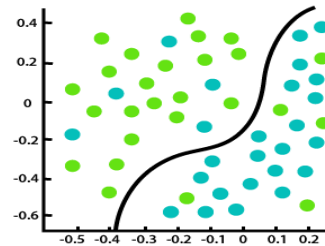
1. Please read the instructions carefully.
2. This Question Paper consists of **21 questions** in two sections – Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. **Out of the given (5 + 16 =) 21 questions, a candidate has to answer (5 + 10 =) 15 questions in the allotted (maximum) time of 2 hours.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
 - i. This section has 05 questions.
 - ii. There is no negative marking.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
 - i. This section contains 16 questions.
 - ii. A candidate has to do 10 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 4 out of the given 6 questions on Employability Skills (1x4=4 marks)	
i.	How is yoga an effective tool for stress management? (a) It encourages good mood. (b) It gives a healthy dose of self compassion (c) Both (a) and (b) (d) None of these	1
ii.	Asking about honest feedback, gathering personality traits, think about daily interactions are related to which of the following skills? (a) Responsibility (b) Adaptability (c) Time management (d) Self-awareness	1
iii.	What is the term used when you press and hold the left mouse key and move the mouse around? (a) Highlighting (b) Dragging (c) Selecting (d) Moving	1

iv.	Which of the following is a symptom of a computer virus? (a) Computer runs faster than normal (b) Computer tends to restart on its own (c) Space on the disk is increased. (d) All of the above	1
v.	Sheela decides to sell her company tyres in Sri Lanka. It does not sell and she has a loss. She apologizes to the people who work for her. She says she will plan better next time. She..... (a) takes responsibility for your mistakes (b) thinks before making a decision (c) does not give up (d) is creative	1
vi.	_____ is important for an enterprise to survive and grow. (a) Finance (b) Confidence (c) Innovation (d) Idea	1
Q.2 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)		
i.	_____ is a branch of engineering that involves the conception, design, manufacture and operation of robots.	1
ii.	“This type of intelligence describes how high the level of self-awareness someone has is. Starting from realizing weakness, strength, to his own feelings “. Identify the type of intelligence described in the above sentence.	1
iii.	Identify the incorrect statement(s) from the following: (i) Data sciences are 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. (ii) CV is a domain of AI that depicts the capability of a machine to get and analyze visual information and afterwards unpredicted some decisions about it. (iii) Natural Language Processing (NLP) enables a user to communicate with the system in his own words indirectly. (a) Only (i) (b) (ii) and (iii) (c) (i) and (ii) (d) Only (iii)	1
iv.	_____ 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. Natural Language Processing d. All of the above	1
v.	The purpose of _____ is to do jobs that are either too time-consuming or boring for people. a. Devices b. Machine c. Gadgets	1

	d. None of the above	
vi.	Platforms like Netflix, Amazon, Spotify, YouTube etc. will not show us recommendations on the basis of what we like. (True, False)	1
Q. 3 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)		
i.	Problem scoping the stage where (a) the problem can be identified and goals can be set (b) the problem can be put on paper (c) the problem can be discussed among stakeholders (d) the problem can be understood by the people	1
ii.	_____ refer to the type of data you want to collect. (a) Data Acquisition (b) Data Features (c) Data Exploration (d) Data Modelling	1
iii.	Vishaka is preparing a model where a customer is given a discount according to the category. The categories are Gold, Silver and Platinum. Which type of model she can use? a) learning-based b) algorithm-based c) customized d) rule-based	1
iv.	Whenever we want an AI project to be able to _____ an output, we need to train it first using data. i. Confuse ii. Predict iii. Detect iv. Identify Choose the correct option: (a) Both i and ii (b) Both iii and iv (c) Only ii (d) Only iv	1
v.	In _____ goal, AI can help in preparing data for people living under the poverty line and help them by providing food, health, water, and energy easily. (a) No Poverty (b) Quality Education (c) Zero Hunger (d) Good Health and Well Being	1
vi.	Identify the algorithm based on the given graph. (a) Dimensionality reduction (b) Classification (c) Clustering (d) Regression	1



Q. 4	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	_____ is especially relevant when used to provide an overview of a news item or blog post, while avoiding redundancy from multiple sources and maximizing the diversity of content obtained.	1
ii.	Which of the following is the sub-field of AI that is focused on enabling computers to understand and process human languages? (a) Deep Learning (b) Machine Learning (c) NLP (d) Data Sciences	1
iii.	Jashwanth was studying about NLP. He wanted to know the term about a technique used to extract the base form of the words by removing affixes from them. Help him in identifying the term used for it.	1
iv.	What is the full form of NLTK?	1
v.	Do the segmentation of the following sentence. I am Batman. I live in Chennai.	1
vi.	Identify the type of chatbot with the information given below: These bots are free and are easy to integrate to a messaging platform and little language processing skills required.	1
Q. 5	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	_____ refers to the real scenario, when the prediction has been made by a model. (Prediction/ Reality)	1
ii.	Moving towards deploying the model in the real world, we test it in as many ways as possible. The stage of testing the models is known as _____.	1
iii.	The condition in which prediction matches with the reality is termed as _____. a) True Positive b) True Negative c) False Positive d) False Negative	1
iv.	Which of the following parameters involve fraction of positive cases that are correctly identified? (a) Accuracy (b) Precision (c) Recall (d) F1 score	1
v.	What is the formula of Accuracy?	1
vi.	Lavanya is learning evaluation. She wants to recognize the concept of evaluation from the below-given facts: 1. A comparison between prediction and reality 2. Helps users to understand the prediction result 3. It is not an evaluation matrix 4. A record that helps in the evaluation Help Lavanya by giving the name to recognize the concept of evaluation.	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	Enlist two Symptoms of Stress.	2
Q. 7	Vasantha is always punctual at school. She has a regular schedule that she follows every day. She plans for study and play time in advance. Enlist the four steps Vasantha must have followed for effective time management.	2
Q. 8	In addition to mobile and tables, what are the other devices that support Android OS?	2
Q. 9	List any two important functions of an entrepreneur.	2
Q. 10	What do you think is more important to start a new business: creativity, Idea, Manpower, Money? Give your suggestion.	2

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

Q. 11	Write four examples of machines that are smart but not AI.	2
Q. 12	If you search on Google for salons, the first few searches are mostly for female salons. This is based on the assumption that if a person is searching for a salon, in all probability it would be a female. Do you think this is a bias? If yes, then is it a Negative bias or Positive one?	2
Q. 13	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.	2
Q. 14	Identify any two stop words in the given sentence: Pollution is the introduction of contaminants into the natural environment that cause adverse change. The three types of pollution are air pollution, water pollution and land pollution.	2
Q. 15	Write down the steps to implement Bag-of-Words algorithm.	2
Q. 16	What is meant by a dictionary in NLP? Define the term sentiment analysis.	2

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

Q. 17	Vishwa is astonished to know about his sister Vaishali who is multi-talented and has excelled in academics, music, dancing, sports and painting. He was quite curious when Vaishali told him that he too possessed all these intelligences like every human being does, but only at different levels. He wondered which intelligence she was talking about. Can you help Vishwa in learning about different types of intelligences by naming and explaining any four types of intelligences?	4
Q. 18	A thief has just found a pair of ancient treasure caves. One of the caves is filled with unbelievable treasure and the other has a fire breathing monster that will eat anyone who opens that cave. One cave has a black door decorated with diamonds and the other cave has a brown door decorated with sapphires. Each of the doors has an engraved description on top. The descriptions say: a. Black Door: Monster is here. b. Brown Door: Only One Door speaks the truth. Which door should the thief open?	4

Q. 19	Anantha Narayanan is eager to learn about what is Neural Networks and especially he wants to know about the features of an Artificial Neural Networks.	4													
Q. 20	Based on the below sentences, guess the dictionary and the document vector. Document 1: I will study to become a doctor. Document 2: Doctors are the best professionals. Document 3: I know many doctors.	4													
Q. 21	<p>Take a look at the confusion matrix:</p> <table border="1" data-bbox="323 528 1206 891"> <thead> <tr> <th colspan="2" data-bbox="323 528 699 667" rowspan="2">The Confusion Matrix</th> <th colspan="2" data-bbox="699 528 1206 595">Reality</th> </tr> <tr> <th data-bbox="699 595 927 667">Yes</th> <th data-bbox="927 595 1206 667">No</th> </tr> </thead> <tbody> <tr> <th data-bbox="323 667 507 779" rowspan="2">Prediction</th> <th data-bbox="507 667 699 779">Yes</th> <td data-bbox="699 667 927 779">True Positive (TP)</td> <td data-bbox="927 667 1206 779">False Positive (FP)</td> </tr> <tr> <th data-bbox="507 779 699 891">No</th> <td data-bbox="699 779 927 891">False Negative (FN)</td> <td data-bbox="927 779 1206 891">True Negative (TN)</td> </tr> </tbody> </table> <p>How do you calculate F1 score?</p>	The Confusion Matrix		Reality		Yes	No	Prediction	Yes	True Positive (TP)	False Positive (FP)	No	False Negative (FN)	True Negative (TN)	4
The Confusion Matrix				Reality											
		Yes	No												
Prediction	Yes	True Positive (TP)	False Positive (FP)												
	No	False Negative (FN)	True Negative (TN)												



End of Paper