





Time Allowed: 2 Hours

M. M.: 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. 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 (26 MARKS):**
  - i. This section has 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 (24 MARKS)****1. Employability Skills (1x4 = 4 Marks)**

I. Ramya traveled to Sweden from India to pursue her higher education. But she doesn't know how to speak Swedish (language of Sweden). Because of this, she was unable to find a part-time job. This is an example of

- |                           |                       |
|---------------------------|-----------------------|
| a. Interpersonal barrier  | b. Physical barrier   |
| c. Organisational barrier | d. Linguistic barrier |

II. Which of the following activities helps in reducing stress?

- |               |                 |
|---------------|-----------------|
| a. Yoga       | b. Walking      |
| c. Meditation | d. All of these |

III. 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 II are incorrect
- c. Statement I is correct but Statement II is incorrect
- d. Statement I is incorrect but Statement II is correct

**IV. How can an antivirus protect your device?**

- a. It can protect it from overheating.
- b. It can increase its performance.
- c. It can prevent data from getting corrupt.
- d. It can backup data.

**V. Ritu leaves the company she worked for and starts catering food for marriage programs. She is an \_\_\_\_\_.**

- a. Entrepreneur
- b. Employee
- c. Cook
- d. Unemployed

**VI. The aim of sustainable development is**

- a. To inculcate the value of self-resistance amongst the people
- b. To save natural resources for everyone
- c. To utilize judiciously and ensure its availability for future generations
- d. All of these

**Q.2 Answer any 5 questions out of 6****I. Chatbots and smart bots are related to the \_\_\_\_\_ domain of AI.**

- a. Data Science
- b. Machine Learning
- c. Computer Vision
- d. Natural Language Processing (NLP)

**II. Which of the following is an example of AI?**

- a. Air Conditioner
- b. Automatic Washing Machine
- c. Smart TV
- d. Self Driving Car

**III. In weather forecasting systems, to predict the temperature, rainfall, etc., the type of technology used is \_\_\_\_\_.**

- a. Computer Vision
- b. Interpersonal Intelligence
- c. Natural Language Processing
- d. Artificial Intelligence

**IV. An important technology used for facial recognition in phones is \_\_\_\_\_ of AI.**

- a. Data Science
- b. Machine Learning
- c. Computer Vision
- d. Natural Language Processing

**V. The full form of NLP is:**

- a. Natural Learner Processing
- b. Natural Leader Processing
- c. Natural Listener Processing
- d. Natural Language Processing

**VI. The AI Project Cycle is a \_\_\_\_\_ that a company must follow in order to derive value from an AI project and to solve the problem.**

- a. Step-by-step process
- b. Random process
- c. Reverse process
- d. None of the above

**Q.3 Answer any 5 questions out of 6****I. \_\_\_\_\_ element helps us to understand and categorize who is directly and indirectly affected by the problem.**

- a. Who
- b. What
- c. Where
- d. Why

**II. What is data in AI?**

- a. Facts
- b. Instructions
- c. Information
- d. All of the above

**III. Data science is the process of a diverse set of data through?**

- a. Organizing data
- b. Processing data
- c. Analyzing data
- d. All of the above

**IV. Clustering is an example of:**

- a. Supervised learning model
- b. Rule-based model
- c. Unsupervised learning model
- d. Reinforced learning model

**V. A graph displays information as a series of data points connected by straight line segments.**

- a. Bar
- b. Scatter
- c. Histogram
- d. Line

**VI. \_\_\_\_\_ domain of Artificial Intelligence enables machines to see through images or visual data, process and analyze them on the basis of algorithms and methods in order to analyze actual phenomena with images.****Q.4 Answer any 5 questions out of 6****I. Statement I: Object Detection is the process of finding instances of real-world objects in images.**Statement II: **Object Detection falls under Computer Vision tasks for single objects.**

- a. Both Statement I and Statement II are True
- b. Statement I is True and Statement II is False



- c. Statement I is False and Statement II is True  
d. Both Statement I and Statement II are False

**II. RGB value \_\_\_\_\_ represents black color.**

**III. Which of these is not an NLP library?**

- a. NLTK  
b. NLP Kit  
c. Open NLP  
d. NLP Suite

**IV. What is the process of extracting emotions within a text data using NLP called?**

- a. Sentiment Analysis  
b. Emotional Data Science  
c. Emotional Processing  
d. Emotional Classification

**V. \_\_\_\_\_ are the words that occur very frequently in a corpus but do not add any value to it.**

- a. Special Characters  
b. Stopwords  
c. Roman Numbers  
d. Useless Words

**VI. What do we call the process of dividing a string into component words?**

- a. Regression  
b. Word Tokenization  
c. Classification  
d. Clustering

### **Q.5 Answer any 5 questions out of 6**

**I. What is the stem of the word "Making"?**

- a. Mak  
b. Make  
c. Making  
d. Maker

**II. The process of understanding the reliability of any AI model based on output by feeding the test dataset is:**

- a. Data feed  
b. Data Reliability  
c. Model Evaluation  
d. None of these

**III. The result of the comparison between the prediction and reality is recorded in:**

- a. F1 Score  
b. Confusion matrix  
c. Evaluation Model  
d. All of these

**IV. Two conditions when prediction matches with reality are True Positive and \_\_\_\_\_.**

**V. What is the value of F1 score if the model is 100% accurate?**

- a. 100  
b. 1  
c. 0  
d. 50



**VI. When the prediction is True and reality is False, that condition is termed as:**

- |       |       |
|-------|-------|
| a. TN | b. TF |
| c. FP | d. FN |

### SECTION-B

**Answer 3 out of 5 questions (Q.6 to 10) -  $3 \times 2 = 6$  Marks**

**Q.6. Explain the following terms:**

- a) Group Communication
- b) Interpersonal Communication

**Q.7. What are the factors that affect self-confidence? (Any Two)**

**Q.8. Aisha is searching for sports content online. How can she protect her data while using the internet?**

**Q.9. List two qualities of successful entrepreneurs.**

**Q.10. How can we achieve Sustainable Development?**

**Answer any 4 out of 6 questions (Q.11 to 16) -  $4 \times 2 = 8$  Marks**

**Q.11. Describe how machines are made Smart/Intelligent.**

**Q.12. Name the 4Ws of problem canvases under the problem scoping stage of the AI Project Cycle.**

**Q.13. What is the goal of data visualization?**

**Q.14. Define pixel and explain its importance in digital images. (2 Marks)**

**Q.15. Write the stem and lemma words for the following: (2 Marks)**

- Healing
- Studying

**Q.16. Define Confusion Matrix. (2 Marks)**

**Answer any 3 out of 5 questions (Q.17 to Q.21) -  $4 \times 3 = 12$  Marks**

**Q.17. Discuss the following types of intelligence: (4 Marks)**

- A. Linguistic Intelligence
- B. Spatial Visual Intelligence



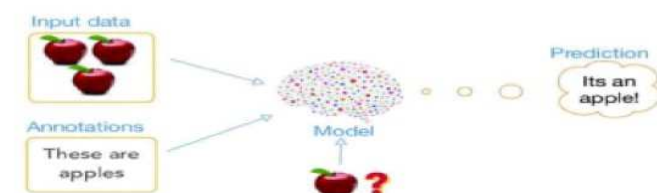
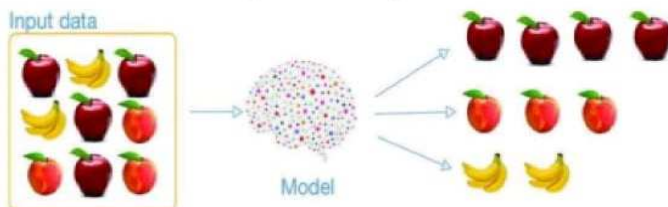


C. Kinaesthetic Intelligence

D. Musical Intelligence

**Q.18. Explain the following components of the AI Project Cycle: (4 Marks)**

- Problem Scoping
- Data Acquisition
- Data Exploration
- Modelling

**Q.19. What is the difference between human language and computer language? (Any 4 points) (4 Marks)****Q.20. Identify and explain the types of learning-based approaches in the given figure. (4 Marks)****Figure 1:****Figure 2:****Q.21. A social media company developed an AI model to predict user churn (cancel their account). During testing, the AI model come up with the following pridictions:**

Confusion Matrix	Reality: Yes	Reality: No
Predicted: Yes	60	25
Predicted: No	5	10

- Calculate percision, recall and F1 Score for churn prediction.
- How many total tests were performed in the above scenario?

**LINK TO OPEN THE MARKING SCHEME OF**  
**THE SAMPLE PAPER -3**