

PRE-BOARD / X / ARTIFICIAL INTELLIGENCE / 2020-21

Time: 2½ Hrs.

MM : 50

General Instructions :

- i. This Question Paper consists of 46 questions grouped into two parts viz. Part A: Employability Skills and Part B: Subject Specific Skills.
- ii. This question paper contains (11 + 35=) 46 questions out of which (7 + 27 =) 34 questions are to be answered.
- iii. All questions of a particular part/section must be attempted in the correct order.

PART A

Q1. Attempt any 4 questions out of 6 ((MCQ/ FILL IN THE BLANKS/ DIRECT QUESTIONS ETC.)

- 1 _____ is helpful when trying to understand others' thoughts and feelings. (Fill up the blank with most appropriate word) 1
- 2 _____ refers to a "physical, mental, or emotional strain or tension". (Fill up the blank with most appropriate word) 1
- 3 The full form of BIOS is _____. (Fill up the blank with most appropriate word) 1
- 4 _____ entrepreneurship is the process where women organise all the factors of production. (Fill up the blank with most appropriate word) 1
- 5 _____ is a new concept wherein old, used material is modified and a new product is created to share with needy/interested people. (Fill up the blank with most appropriate word) 1
- 6 _____ and _____ are the two types of motivation . (Fill up the blank with most appropriate word) 1

Q2. Attempt any 3 questions out of 5 (SHORT ANSWER TYPE QUESTIONS)

- 1 Name any 4 barriers to effective communication. Write any two ways of overcoming these barriers. 2
- 2 What are Stressors ? What do you mean by "ABC" of stress management? 2
- 3 Write two ways of creating a folder in file explorer. 2
- 4 Mention any four Myths of Entrepreneurship. 2
- 5 Write any 4 ways that can make waste management easier. 2

PART B

Q3. Attempt any 20 questions out of 24 ((MCQ/ FILL IN THE BLANKS/ DIRECT QUESTIONS ETC.))

- 1 Which type of intelligence relates to religious and spiritual awareness ? 1
- 2 _____ and AI can definitely open the doors to humanoids and self-driving cars. (Fill up the blank with most appropriate word) 1
- 3 _____ 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. (Fill up the blank with most appropriate word) 1
- 4 Define the term “Machine learning”. 1
- 5 What do you mean by Deep Learning? 1
- 6 All the virtual assistants have a female voice. ” Which part of AI does this example highlight? 1
- 7 Which type of dataset is used by unsupervised learning model ? 1
- 8 Regression model works on _____ data. (Fill up the blank with most appropriate word) 1
- 9 What do you mean by Rule Based approach ? 1
- 10 What is hidden layer in neural network ? 1
- 11 Which stage of AI project cycle has accuracy, precision , recall and F1 score ? 1
- 12 The _____ learning models are used to identify relationships, patterns and trends out of the data which is fed into it.(Fill up the blank with most appropriate word) 1
- 13 What do you mean by NLP? 1
- 14 How are virtual assistant helpful ? 1
- 15 Name the two things that “**Bag of words**” process gives us. 1
- 16 _____ is a term used for any word or number or special character occurring in a sentence. (Fill up the blank with most appropriate word) 1
- 17 What is the main difference between human and computer language? 1
- 18 How is Text classification different from sentiment analysis? 1
- 19 Mention the two parameters used in F1 score . 1
- 20 What do you mean by Evaluation stage? 1
- 21 What is confusion matrix ? 1

- | | | |
|----|--|---|
| 22 | How is true positive different from false positive ? | 1 |
| 23 | What will be the accuracy, if True positive = 0, True negative=90 and total cases are 100? | 1 |
| 24 | What is the difference in the way of calculation made between F1 score and prediction ? | 1 |

Q4. Attempt any 4 questions out of 6 (SHORT ANSWER TYPE QUESTIONS)

- | | | |
|---|---|---|
| 1 | What is the difference between Interpersonal and Intrapersonal intelligence? | 2 |
| 2 | Briefly explain “Dimensionality Reduction”. In which application area do we use Dimensionality Reduction? | 2 |
| 3 | What is Text Normalization and Corpus in NLP? | 2 |
| 4 | Differentiate between Script bot and smart bot. (Any 2 differences) | 2 |
| 5 | What is the difference between prediction and reality? | 2 |
| 6 | Explain the recall parameter in Evaluation along with the calculation formula. | 2 |

Q5. Attempt any 3 questions out of 5 (LONG/ ESSAY TYPE QUESTIONS)

- | | | |
|---|---|--------|
| 1 | Explain the two application areas of Computer Vision and Natural language processing each. | 4 |
| 2 | Rehan was asked to make an AI project cycle for controlling traffic during peak hours. In one of the stage of project cycle , Rehan used observation, sensors and camera as data collection technique . How can observation, sensors and camera help him to collect the data ? Name the stage in which Rehan will collect the data. | 4 |
| 3 | Explain the process of stemming and lemmatization with the help of examples in NLP? | 4 |
| 4 | <ul style="list-style-type: none"> a. How is TFIDF useful ? Explain document frequency in IDF. b. Write the significance of stop words and rare words in TFIDF? | 2+2 =4 |
| 5 | How can we calculate accuracy in a real life application ? Explain the various parameter used in accuracy along with the definition of accuracy. | 4 |