

ASSIGNMENT
CLASS X
ARTIFICIAL INTELLIGENCE (CODE 417)

SECTION A – OBJECTIVE TYPE QUESTIONS

1. Questions on Employability Skills

- (i) “M D Gulati started with a small shop. With his focus, dedication and clear ideas, MDH became one of the most popular brands in India besides, having a good reputation all over the world.”

Which self-management skill is clearly visible in the given statement?

Ans. Self-Motivation

- (ii) When you bring the mouse over a file in File Explorer, it will show the details of that file. This is known as—

- | | |
|-------------------|------------------|
| (a) Drag and drop | (b) Double click |
| (c) Hover | (d) Single click |

Ans. (c) Hover

- (iii) **Assertion (A):** A doctor works for a renowned hospital.

Reason (R): The statement given above is an example of wage employment.

- | |
|--|
| (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 |

Ans. (a) Both A and R are correct and R is the correct explanation of A

- (iv) _____ the work is all about identifying and noting how we spent our time and analyzing how to spend our time effectively.

- | | |
|-----------------|------------------|
| (a) Organizing | (b) Prioritizing |
| (c) Controlling | (d) Tracking |

Ans. (d) Tracking

- (v) Remya travelled to Sweden from India to pursue her higher education. But she does not 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) Organizational barrier | (d) Linguistic barrier |

Ans. (d) Linguistic barrier

2.

(i) **Assertion (A):** One can be a good singer while the other can be a great athlete.

Reason (R): Humans possess different types of intelligence but at different levels.

- (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

Ans. (a) Both A and R are correct and R is the correct explanation of A

(ii) The Indian Government banned a few apps stating, “servers in the hostile nation are receiving and using the acquired data improperly.”

Which terminology suits best for this action?

- (a) AI Ethics
- (b) Data Privacy
- (c) AI Bias
- (d) AI Access

Ans. (b) Data Privacy

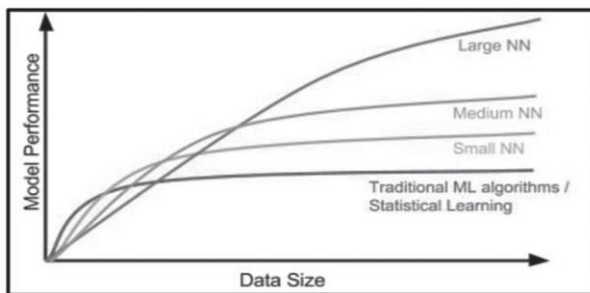
(iii) **Statement 1:** There are four layers in a neural network.

Statement 2: The first layer of the neural network is known as the output layer.

- (a) Both Statement 1 and Statement 2 are correct
- (b) Both Statement 1 and Statement 2 are incorrect
- (c) Statement 1 is correct but Statement 2 is incorrect
- (d) Statement 2 is correct but Statement 1 is incorrect

Ans. (a) Both Statement 1 and Statement 2 are correct

(iv) Observe the given graph and fill in the blank:



_____ the neural network, better is the performance.

Ans. Larger

(v) _____ is a simple file format that stores data separated by commas.

- (a) .jpg
- (b) .doc
- (c) .csv
- (d) .png

Ans. (c) .csv

3.

(i) Read the examples given below—

- (i) Using ChatGPT to write an email
- (ii) Face-unlock technology of mobile phones using camera
- (iii) Turning off lights with IoT device
- (iv) Hand sanitizer dispenser having sensor

Choose the options that are **not** AI

- (a) (i) and (ii)
- (b) (i) and (iii)
- (c) (iii) and (iv)
- (d) (i), (iii) and (iv)

Ans. (c) (iii) and (iv)

(ii) _____ refer to the type of features that we want to collect.

Ans. Data Features/Data

(iii) Which of the following is an application of data science?

- | | |
|------------------------------|---------------------------|
| (a) Text Summarization | (b) Target Advertisements |
| (c) Face Lock in Smartphones | (d) Email Filters |

Ans. (b) Target Advertisements

(iv) _____ is the process of finding instances of real-world objects in images or videos.

- | | |
|---------------------------|------------------------|
| (a) Instance Segmentation | (b) Object Detection |
| (c) Classification | (d) Image Segmentation |

Ans. (b) Object Detection

(v) Identify the given Chatbot type:

It learns from its environment and experience. It also builds on its capabilities based on the knowledge. These can collaborate with humans, working along-side them and learning from their behaviour.

Ans. Smart Bot

SUBJECTIVE TYPE QUESTIONS

4. List two best practices for effective communication.

- Ans.**
1. Use simple language
 2. Be respectful to others' opinions
 3. Do not form assumptions on culture, religion or geography
 4. Try to communicate in person as much as possible
 5. Use visuals
 6. Take help of a translator to overcome differences in language

5. How is society helping entrepreneurs in their business?

Ans. Society is helping entrepreneurs by

- | | |
|----------------------------|---------------------------|
| 1. Creating needs | 2. Providing raw material |
| 3. Buying/selling of items | 4. Making money |

6. Identify any two stop words which should not be removed from the given sentence and why? Get help and support whether you're shopping now or need help with a past purchase.

Contact us at *abc@pwershel.com* or on our website *www.pwershel.com*

Ans. Stopwords in the given sentence which should not be removed are:

@, . (fullstop) , _ (underscore) , 123 (numbers)

These tokens are generally considered as stopwords, but in the above sentence, these tokens are part of an email ID. Removing these tokens may lead to invalid website address and email ID. So these words should not be removed from the above sentence.

7. Draw the confusion matrix for the following data

- the number of true positive = 100
- the number of true negative = 47
- the number of false positive = 62
- the number of false negative = 290

Ans.

Confusion Matrix		Reality	
		Yes	No
Prediction	Yes	100	62
	No	290	47

8. We, human beings, can read, write and understand many languages. But computers can understand only machine language. Do you think we might face challenges if we try to teach computers how to understand and interact in human languages? Explain.

Ans. Yes, we might face challenges if we try to teach computers how to understand and interact in human languages. The possible difficulties are:

1. Arrangement of the words and meaning—the computer has to identify the different parts of a speech. Also, it may be extremely difficult for a computer to understand the meaning behind the language we use.
2. Multiple meanings of a word, the same word can be used in a number of different ways, which according to the context of the statement changes its meaning completely.
3. Perfect syntax, no meaning, sometimes a statement can have a perfectly correct syntax but it does not mean anything. For example, take a look at this statement:

Chickens feed extravagantly while the moon drinks tea.

This statement is grammatically correct but does this make any sense? In a human language, a perfect balance of syntax and semantics is important for better understanding.

9. An AI model made the following sales prediction for a new mobile phone which they have recently launched:

Confusion Matrix		Reality	
		Yes	No
Prediction	Yes	50	40
	No	12	10

- (a) Identify the total number of wrong predictions made by the model.
- (b) Calculate Precision, Recall and F1 Score.

Ans. (a) The total number of wrong predictions made by the model is the sum of False Positive and False Negative.
 $FP + FN = 40 + 12 = 52$

(b) Precision = $TP / (TP + FP)$

$$= 50 / (50 + 40)$$

$$50/90$$

$$= 0.55$$

$$\text{Recall} = TP / (TP + FN)$$

$$= 50 / (50 + 12)$$

$$= 50/62$$

$$= .81$$

$$\text{F1 Score} = 2 * \text{Precision} * \text{Recall} / (\text{Precision} + \text{Recall})$$

$$= 2 * 0.55 * .81 / (.55 + .81)$$

$$= .891/1.36$$

$$= 0.65$$