

CHAPTER 3: ARTIFICIAL INTELLIGENCE DOMAINS

A. Choose the correct answer.

A. Select the correct answer.

1. A machine needs which of the following to learn what it is supposed to.
 - a. Program
 - b. Data
 - c. Logic
 - d. None of these

2. Data is one of the core _____ of AI.
 - a. Inputs
 - b. Outputs
 - c. Domains
 - d. Applications
3. Our browsing habits make our which of the following?
 - a. Browsing signature
 - b. Browsing fingerprint
 - c. Both a) and b)
 - d. None of these
4. Which of the following characteristics of data make it difficult to be processed by human brain?
 - a. Volume of data
 - b. Variety of data
 - c. Constant generation of data
 - d. All of these
5. Which of the following domains of AI deals with visual data?
 - a. NLP
 - b. CV
 - c. Both a) and b)
 - d. Robotics
6. Which of the following domains of AI deals with human speech and language?
 - a. NLP
 - b. CV
 - c. Both a) and b)
 - d. Robotics
7. What is the range of intensity of basic colours in an RGB model?
 - a. 0-285
 - b. 0-275
 - c. 0-265
 - d. 0-255
8. In the colour model CMYK, what does K stand for?
 - a. Grey
 - b. Blue
 - c. Black
 - d. Red
9. The structure and grammar of a language is referred to as which of the following?
 - a. Semantics
 - b. Syntax
 - c. Voice recognition
 - d. Speech recognition
10. The underlying meaning of a language is referred to as which of the following?
 - a. Semantics
 - b. Syntax
 - c. Voice recognition
 - d. Speech recognition

11. The basic word from which other variations are formed is called the _____ of the word.

a. Affix



b. Prefix



c. Syntax



d. Root



12. The language and visual data, all is understood by a machine in the form of _____

a. Algorithm



b. Numbers



c. Intelligence



d. Text



B. Categorise the following into 3 domains of AI - DATA, COMPUTER VISIONS and NATURAL LANGUAGE PROCESSING.

A

B

C

1. Facial features

2. Student's photograph

3. Recorded voice

4. Fingerprint

5. Product image

6. Text typed into the computer

7. Voice command

8. Student's marks sheet

9. Document classification

10. Document scan

11. Customer feedback

12. Detecting traffic light

DATA

CV

NLP

Ans:

Data	Computer Vision	Natural Language Processing
Text Typed into computer	Facial Feature	Recorded Voice
Student's marks sheet	Student's Photograph	Voice Command
Customer Feedback	Fingerprint	
	Product image	

C. Fill in the blanks.

Document classification, Numbers, Domain, Data, Real-time

1. The term Domain refers to an area of common application or practice.

2. Data is found in the form of values, audio, visuals and natural language.

3. An auto-driven car is programmed to process Real Time visual data it receives from its sensors.

4. Document Classification is an application of NLP.

5. To understand and process any data, computer needs it to be described in the form of Numbers.

D. Mark the following statements as True or False.

1. False 2. True 3. False 4. False 5. True

E. Answer the following questions.

1. Data is available in various forms around us. It is plain text form such as in books and databases, visual data is in the form of images, videos and animations. Another form of data is the language we speak and write that is natural language.

2. Financial institutions, social media platforms, entertainment portals, industrial data, e-commerce websites.

3. Educational websites, e-commerce websites, financial institutions, government portals, social media platforms, various industries, hospitals, tours and travel, entertainment portals.

4. Bulk, constantly generated, complex data human brain is not capable to process.

5. Computer vision is the AI domain that deals with analysing visual data such as images, spatial data (satellite images), video frames etc.

6. Image is composed of millions of tiny elements called pixels. Each pixel has three basic colours – red, green and blue.

7. RGB model is composed of 3 basic colours – red, green and blue whose mix of different intensities generates different colours. Minimum intensity is 0 and maximum is 255. If all 3 basic colours have 0 intensity then it makes black colour while maximum intensity of these basic colours together makes white colour.

8. Ability of an AI machine to process natural language is called Natural Language Processing.

9. Syntax refers to the grammar and formation of the language. E.g., They go. He goes. I go.

10. Semantics of a language refers to the underlying meaning of the language. E.g., I like to have juice in the morning. I like to drink juice in the morning. – Here, 'have' and 'drink' mean the same.