 **Indian School Al Wadi Al Kabir**

**Pre-Mid Term Examination**

**ARTIFICIAL INTELLIGENCE (CODE:417) – SET-1**

Class: IX Time: 1 Hour

Date: 06/06/2024 Max. Marks: 30

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| General Instructions:  **SECTION A**: I. All Questions are compulsory.  **SECTION B**:  II. Answer any 5 out of the given 6 questions each carries 2 marks.  III.Answer any 2 questions out of given 4 questionseach carries 4 marks. |

**SECTION A: OBJECTIVE TYPE QUESTIONS**

1. **Answer all the following: (12 x 1 =12 marks)**
   * + 1. The \_\_\_\_\_\_**DATA**\_\_\_\_\_\_\_\_\_ can be in any form textual information, audio, video, big data like predictions, insights, forecasts, decision making.
       2. \_\_\_\_\_\_\_\_**GOOGLE MAPS**\_\_\_\_\_\_is the AI based applications that help us in navigation.
       3. A \_\_\_\_\_\_**CONJUNCTION**\_\_\_\_\_joins words, phrases, or clauses.
       4. Smart assistants such as Alexa, Siri are the examples of

**a. Natural Language Processing** b. Data Science

c. Machine Learning d. Computer Vision

5. A verb describes the action and Object is the person or thing that receives the action. (**True**/False)

6. An application lets you search what you see, get things done faster and understand the world around you using just your camera or a photo. Which domain does this app belong to?

a) Natural Language Processing b) Data Sciences

**c) Computer Vision** d) Artificial Language Processing

1. Which one of the following is an application of AI?

a) Remote controlled Drone **b) Self-Driving Car**

c) Self-Service Kiosk d) Self-Watering Plant System

8. **\_\_\_\_\_\_\_\_\_\_\_\_VERBAL**\_\_\_\_\_\_\_\_\_\_\_\_communication is the use of language to transfer information through speaking or sign language.

9. Full stop, comma, Exclamation mark, Question marks, Apostrophe are the types of \_\_\_\_\_\_**PUNCTUATION**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

10. Computer vision is concerned with modelling and replicating human vision using computer software and hardware. (**True**/False)

11. Online shopping on Amazon and eBay like websites using chatbots to collect data of customers and building a good rapport with buyers is related to which application of AI?

**E-COMMERCE**

12. Chatbots are the examples of AI models using NLP. (**True**/False)

**SECTION B: SUBJECTIVE TYPE QUESTIONS**

**II.Answer any 5 out of the given 6 questions (5 x 2 = 10 marks)**

1. Explain two examples of artificially intelligent applications in a smart home.
2. Define Data Science.
3. Define a paragraph with an example.
4. List any 4 advantages of written communication.
5. Define Natural Language Generation (NLG).
6. List any 4 disadvantages of verbal communication.

**III.Answer any 2 questions out of given 4 questions (2x 4 = 8 marks)**

1. In CV, list the 4 methods to produce information.
2. Explain how AI works in the following areas:
3. Google Search Engine b) E-commerce websites
4. Explain communication cycle.
5. Explain the applications of AI in healthcare and Banking and Finance.

**\*\*\*\*\*\*\*\*\* ALL THE BEST \*\*\*\*\*\*\*\***

**ANSWER KEY**

**SECTION B: SUBJECTIVE TYPE QUESTIONS**

**II.Answer any 5 out of the given 6 questions (5 x 2 = 10 marks)**

**13.** Explain two examples of artificially intelligent applications in a smart home.

Smart voice assistants playing a vital role in smart homes.

Smart thermostats used to adjust the temperature based on the user’s preferences.

Smart lights change the color and intensity of lights based on time

**14.** Define Data Science.

Data science, is the field of study that involves collecting, analyzing, and interpreting large sets of data to uncover insights, patterns, and trends that can be used to make informed decisions and solve real-world problems.

15. Define a paragraph with example.

A group of sentences forms a paragraph. While writing a paragraph, make sure the sentences have a common idea.

Eg: When you want to write about a different idea, make a new

paragraph. For example, if you are writing about your school, the first

paragraph can be of sentences about the name, location, size and

other such details. In the next paragraph you can use sentences to

describe what you like about your school.

16. List any 4 advantages of written communication.

**1. A Permanent Record:**

* A written communication helps to maintain a permanent record of the information exchanged or shared.

**2. Meticulous Presentation:**

* As a written document is a permanent record, people are very cautious to fulfil all the writing requisites to make the writing perceivable at the other end. Thus, every document curated covers all major information pointers necessary to be communicated.

**3. Easy Circulation:**

* A written document can easily be circulated in an organisation, unlike the oral communication medium. Thus, this attribute of written communication comes handy in equipping the masses with the necessary information.

**4. Suitable for Statistical Data:**

Statistical charts and figures are difficult to be interpreted verbally, thus, circulating a document allow people to examine such intrinsic detail with ease.

17. Define Natural Language Generation (NLG).

NLG uses structured data and generates meaningful narratives out of it. It helps to

produce meaningful phrases and sentences along with Text planning, Sentence Planning and Text realization.

18. List any 4 disadvantages of verbal communication.

1. Chances of distortion of meaning: Due to the presence of various barriers in effective communication, it happens that the intended meaning of the message changes for the intended person which causes a lot of problems in the future.

2. Not convenient for long messages: It is not at all convenient to convey long messages orally as it may happen that by the time message is completed, the receiver may forget the previously spoken important points leading to a chance of ineffective communication.

3. Irrelevant information: While having an important discussion, a lot of irrelevant information can creep in during a conversation leading to a waste of time and gap in the relevant information. This leads to unnecessary time waste and sometimes omitting or forgetting to converse on what is really important. Therefore it is always necessary to keep your communication process clear of any unwanted discussion that may lead to wastage of your precious time and energy.

4. Create a misunderstanding: Usually, when two individuals are having deep conversations, they can have some misunderstandings during the time. Sometimes subtle hints given or some words spoken with some intention get misinterpreted and a whole new different meaning comes out of it. Thus it becomes crucial to know that what you have has a crystal clear meaning with no indirect hints that could make a conversation difficult.

5. Communication cost: Sometimes verbal communication can be really expensive if you need to communicate in a language that you are not familiar with. You will need another person to play the part of translator for you. With advanced technology of hologram, translator may not be required but surely big cost is involved.

**III.Answer any 2 questions out of given 4 questions (2x 4 = 8 marks)**

* + - 1. In CV, list the 4 methods to produce information.

Acquiring Images

Processing Images

Analyzing Images

Understanding Images

* + - 1. Explain how AI works in the following areas:

1. Google Search Engine b) E-commerce websites

a. Google Search Engine:

With the help of AI, Google Search Engine has been turned into intelligent search which is a new network of systems that produces direct answers. It uses voice and image searches and has incorporated deep learning to fasten the searches with more accuracy.

b. E-commerce website:

With the use of big data, AI in E-Commerce is impacting customer choices by recording the data of previous purchases, searched products, and online browsing habits. Product recommendations provide multiple benefits for E-commerce retailers including: Higher number of returning customers.

* + - 1. Explain communication cycle.

Communication Cycle is the process by which a message is sent by one individual and it passes through a chain of recipients. The timings and effectiveness of a communication cycle is based on how long it takes for feedback to be received by the initial sender

Sender: the person or entity originating the communication

Message: the information that the sender wishes to convey

Encoding: how the sender chooses to bring the message into a form appropriate for sending

Channel: the means by which the message is sent

Receiver: the person or entity to whom the message is sent

Decoding: how the receiver interprets and understands the message

Feedback: the receiver's response to the message

* + - 1. Explain the applications of AI in healthcare and Banking and Finance.

**Healthcare**

* With an introduction to AI-powered machines detection of disease and treatment becomes a bit easier and convenient.
* AI-powered machines make the process of treatment and management simplified research to cure some disease done by AI- based systems.

**Banking and Finance**

* The banking and finance industry relies on AI for providing customer services, protection against fraud, investment suggestions, and so on.
* While using the chat service of banks the chat is represented by Bots only. In the finance industry, AI is used to analyze data.