



BK BIRLA CENTRE FOR EDUCATION
SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL
ANNUAL EXAMINATION 2024-25
ARTIFICIAL INTELLIGENCE



Class: VIII
Date: 21-03-2025
Name:

Duration: 2 hrs.
Max Marks: 50
Exam No. :

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of 18 questions in two sections: Section A & Section B.
3. Section A has Objective type questions (MCQ, Fill in the blanks) whereas Section B contains Subjective type questions.
4. All questions of a particular section must be attempted in the correct order.
5. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
 - i. This section has 02 questions.
 - ii. Marks allotted are mentioned against each question/part.
 - iii. There is no negative marking.
 - iv. Do as per the instructions given.
6. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
 - i. This section has 16 questions.
 - ii. A candidate has to do 11 questions.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.

MARKING SCHEME

SECTION A: OBJECTIVE TYPE QUESTIONS

I. Multiple Choice Questions: (Answer any sixteen)

(16 X 1 = 16)

(1) Full form of “TAY”, the artificial intelligent chatbot is :

- | | |
|-----------------------|------------------------|
| (a) Trends About You | (b) Thinking About You |
| (c) Talking About You | (d) Time And You |

(2) What is your data footprint ?

- (a) **the data trail left by you when you surf the internet**
(b) The time you spend on your computer
(c) the number of electronics you buy in a year
(d) the number of apps you have on your mobile

(3) What is the primary goal of data privacy ?

- (a) to protect personal data from unauthorized access, use, disclosure, alteration or destruction
(b) to ensure that personal data is collected, processed and used in a fair and lawful manner
(c) to empower individuals with control over their personal data
(d) **all of the above**

(4) What is the purpose of transforming data into information ?

- | | |
|---|--|
| (a) to make the data easier to store | (b) to make the data easier to analyze |
| (c) to give the data meaning and context | (d) to make the data more valueable |

- (5) Which of the following is an example of quantitative data ?
 (a) the colour of a product (b) the size of a customer's business
 (c) **the number of items sold in a day** (d) the customer's opinion of a product
- (6) The vacuum cleaner robot is a little, self-contained cleaning robot that you can control to clean rugs, carpets and floors.
 (a) **Roomba** (b) Sophia (c) Nao (d) Eagle 2.0
- (7) The has been called an "Ultra compact assistant robot" due to its small size and kind demeanour.
 (a) Roomba (b) Sophia (c) **Wakamaru** (d) Nao
- (8) bots are used to automate repetitive operations like filling out forms to post advertisements on websites.
 (a) Hardware (b) Internet (c) **Software** (d) Multiuser
- (9) is an artificially intelligent robot toy with a strong personality and a range of emotions.
 (a) Sophia (b) **Cozmo** (c) Nao (d) Eurobot
- (10) What are the benefits of using humanoid robots ?
 (a) They can perform tasks that are dangerous for humans.
 (b) They can work 24/7 without getting tired.
 (c) They can be programmed to do repetitive tasks.
 (d) **All of the above.**
- (11) What is the main difference between a humanoid robot and other types of robots ?
 (a) **A humanoid robot is designed to look like a human.**
 (b) A humanoid robot is more advanced than other types of robots.
 (c) A humanoid robot is more expensive than other types of robots.
 (d) There is no difference between a humanoid robot and other types of robots.
- (12) What are some of the challenges associated with designing and building humanoid robots ?
 (a) Finding the right materials to use.
 (b) Making the robot walk and move like a human.
 (c) Making the robot think like a human.
 (d) **All of the above.**
- (13) Which of the following is NOT a characteristics of humanoid robots ?
 (a) They have arms and legs. (b) They are designed to look like humans.
 (c) **They are capable of emotions.** (d) They can perform tasks that humans do.
- (14) Which HTML tag is used to embed an audio file into a web page ?
 (a) **<audio>** (b) <video> (c) (d) <source>
- (15) Which HTML attribute specifies whether to display playback controls (eg. Play, pause, volume) for the audio or video ?
 (a) autoplay (b) **controls** (c) loop (d) muted
- (16) Which HTML tag is used to create a hyperlink ?
 (a) <link> (b) **<a>** (c) (d) <href>
- (17) Which HTML attribute specifies the URL of the linked resource ?
 (a) **href** (b) src (c) alt (d) title
- (18) How do you combine two strings in Python ?
 (a) **string1 + string2** (b) string1.combine(string2)
 (c) string1.concatenate(string2) (d) string1*string2
- (19) A variable that can only have two values, True or False are called
 (a) **Boolean** (b) Standard
 (c) Elif (d) Else
- (20) Which two statements are used to implement iteration ?

(a) IF and WHILE

(b) ELSE and WHILE

(c) FOR and WHILE

(d) IF and ELSE

II. Fill in the blanks. (Answer any eight)

(8 X 1 = 8)

(1) Surgical Robot

(2) Female pedestrian

(3) Ethics

(4) Deep fakes

(5) Consecutive sequences

(6) Positive

(7) Negative

(8) Concatenate

(9) True

(10) For

SECTION B: SUBJECTIVE TYPE QUESTIONS

III. Short Answer Type Questions : (Answer any seven)

(7 X 2 = 14)

(1) Define Ethics. Give two examples where AI is being used for good.

Ans. : The moral principles governing the behavior or actions of an individual or a group. It is used for improving health information, improving consistency of healthcare information, Predicting human wild life conflict using AI, inform dam and barrage water releases and build early warning system to risk of disasters.

Human Rights : The Indian project Track Child uses the latest face recognition technology to compare photos from missing kids with photos from kids from orphanages.

Environment : Wildlife conservation involves counting animals, which is a difficult task. Motion sensitive cameras can automatically photograph wild animals, providing massive amounts of data.

Improving health information

Health care

Warning system to risk of disasters.

(2) Your younger sibling has spent a lot of time in preparing a 3D model of India Gate which is 3 ft tall and kept it on ground for safety concerns. Your mother started the autonomous robot to clean the floor and it tries to clean the area near the model but it falls and breaks.

(a) Who can be held liable for damages caused by autonomous systems ?

(b) List two AI Ethics.

Ans. :

Manufacturer of the Autonomous Robot

- **Product Liability:** The manufacturer could be held liable if the damage was caused due to a design flaw, manufacturing defect, or failure to provide adequate warnings or instructions. If the robot was not programmed to detect and avoid obstacles like the 3D model, this could be a case of product liability.

User (Your Mother)

- **Operational Liability:** If your mother operated the robot in a manner inconsistent with the manufacturer's guidelines or failed to supervise its operation properly, she might be held liable for the damages. For example, if the robot was meant to be used only when the area was clear of delicate objects, but your mother started it knowing the model was there, she could be considered responsible.

(b) List two AI Ethics.

Ans. : (i) Be socially beneficial.

(ii) Avoid creating or reinforcing unfair bias.

(iii) Be built and tested for safety

(iv) Be accountable to people.

(v) Incorporate privacy design principles.

(3) Explain the difference between data and information.

Ans. : Data : It refers to raw facts, figures and statistics that are collected and stored in a structured and unstructured format.

Information : It is data that has been processed and organized in a way that gives it meaning and context.

(4) Robots for education are intended for use in classrooms and other learning environments. Justify the statements by giving a few examples.

Ans. : Robots for education can support educators in delivering courses or let students research areas of interest to them without running the danger of getting hurt. These robots are designed specifically for children. Eagle 2.0 is the first humanoid robot teacher in India. The robot teachers serve as the instructors' helpers. These can contribute to bettering instruction and enhancing the students interest in it. They are able to teach at any place without being overworked or stressed out or migrating to a location with better pay.

(5) Farmers in India can profit from using agricultural robots in a number of ways. Explain any three ways to do so.

Ans. : Farmers in India can profit from using agricultural robots in a number of ways, some of which are listed below :

Reduced labour requirements : Agricultural robots can easily carry out all the major farming tasks, freeing up human labour.

Improved earnings : Agbots are typically expensive, one time investments.

Preserving valuable resources : Agbots ensure the best possible use of resources like water, chemicals etc.

(6) What is a humanoid robot ? Give any two characteristics of a humanoid robot.

Ans. : Humanoid robots are designed to resemble human beings in form and function and mimic human movement.

- They have a bipedal form and can walk on two legs.
- They have a wide range of motion in their joints.
- They are often equipped with sensors, cameras and other tools for perception and interaction with humans.

(7) Distinguish between HREF and NAME attributes of <A> tag with the help of example.

Ans. :

HREF : The meaning of href is hypertext reference. It takes the value(link) as the address of the supporting document.

` website of W3C`

NAME : This attribute gives a name to the anchor tag. It takes the value as “text string”.

Sales order set up

(8) Write Python code to calculate and display the Area and Perimeter of Rectangle by inputting the length and breadth of it.

Ans. :

```
length = int(input(“Enter Length of Rectangle : ”))
breadth = int(input(“Enter Breadth of Rectangle : ”))
area = length * breadth
perimeter = 2 * (length + breadth)
print(“Area of Rectangle = ”, area)
print(“perimeter of Rectangle = ”, perimeter)
```

(9) What is a string ? What is slicing of string in Python ? Explain with example.

Ans. : In Python, a consecutive sequence of characters, which are enclosed or surrounded by single (‘ ’) or double (“ ”) quotes, is known as a string.

Example : ‘Welcome’, “India”

We can use a range of items in a string by using the slicing operator (colon). Slicing as the meaning goes is basically chopping or retrieving a set of values from a particular sequence.

Format : str[start:end:step_size]

Example :

```
py_str = “Programming”
print(py_str[3])
Output : g
```

(10) What is a selection statement in Python ? Which selection statements does Python provide ? Explain.

Ans. : The statements which are executed depending upon a condition are known as Selective/Selection statements. A condition is used to decide which set of statements are to be executed between two alternative sets of statements. Therefore these statements are also called conditional or decision construct statements.

Statement	description
If statement	An if statement consists of a Boolean expression followed by one or more statements
If....else statement	An if statement can be followed by an optional else statement, which executes when the Boolean expression is false
Nested if statement	You can use one if or else if statement inside another if or else if statements

IV. Long Answer Type Questions : (Answer any four)

(4 X 3 = 12)

(1) "AI is interdisciplinary in nature and its foundations are in various fields." Justify the statement with three valid points.

Ans. :

Human rights

Environment

AI is used for improving health information

It is used to predict the risk of expectant mothers to increase positive healthcare

Improving consistency of healthcare information

Predicting human wild life conflict using AI

It is used to inform dam and barrage water releases and build early warning system to risk of disasters

(2) What are data footprints ? Why should you keep a data recovery plan ? Explain any three data recovery plan.

Ans. : Data footprints are the traces left by an individual or organization's online activities and interactions.

Data recovery software can be used to scan the storage device for recoverable data. On the other hand, hardware or software failure may require more advanced recovery techniques, such as disk imaging or the use of specialized hardware tools.

Data loss can be caused by various factors, including hardware or software failure, natural disaster, transaction failure, system crash, or disk failure, cyber attacks, human error or theft.

Data recovery on the other hand, is the process of retrieving lost or corrupted data from backup sources or storage devices..

There are several methods of data recovery :

1. **Backup and restore :** This method involves regularly backing up data to an external storage device or cloud based service.
2. **Data recovery software :** There are
3. **Professional data recovery services :** These services use specialized equipment and techniques to recover data from damaged or corrupted storage devices.

(3) How are robots used in the domestic sector ? Explain with a few examples. (any three)

Ans. : Robots are increasingly becoming a part of the domestic sector, helping to automate household tasks, improve convenience, and enhance the quality of life. Here are some examples of how robots are used in homes:

1. Cleaning Robots
2. Lawn Care Robots
3. Personal Assistants
4. Security Robots
5. Entertainment Robots
6. Assistive Robots

(4) Write and explain any three identification rules of a mobile robot.

Ans. :

1. **Mobility** : It should be designed to allow it to move around in the intended environment.
2. **Power Source** : It should be designed with a reliable power source that matches the requirements of the application.
3. **Payload Capacity** : It should be designed to match the tasks it will perform.
4. **Safety and reliability** : It should be designed to operate safely and reliably in the intended environment.

(5) Explain the `` tag and the attributes `src` and `alt` of HTML. Give suitable example of it.

Ans. :

The `` tag in HTML is used to embed images in a web page. It does not have a closing tag and is a self-closing tag, which means it doesn't need an end tag. The image source and additional details like alternate text are specified using attributes inside the `` tag.

1. **src (Source):**

- The `src` attribute specifies the path to the image file that you want to display on the web page.
- Example: `src="image.jpg"`, `src="https://example.com/images/picture.jpg"`

2. **alt (Alternate Text):**

- The `alt` attribute provides a text description of the image.
- Example: `alt="A beautiful sunset over the mountains"`

```
<html >
<head>
<title>Image Example</title>
</head>
<body>
<h1>Welcome to My Website</h1>
<p>Here is a picture of a sunset:</p>

<p>Enjoy the view!</p>
</body>
</html>
```

(6) What are iterative statements ? Which are the iterative statements in Python ? Explain with example.

Ans. : The set of statements which are repeated depending upon a condition are known as Iterative statements. A loop statement allows us to execute a statement or group of statements multiple times. Iterative statements in Python are :

While Loop

```
a = 5
while a>0:
    print(a)
    a -= 1
    print("End")
```

For Loop

For I in range (1,10):
Print(i)

Nested Loop

.....XXXXXXXXX.....