MATH LOVE INSTITUTE

Annual Examination 2025-26

Class: VII | Subject: Computer Science (Set 2)

Time: 3 Hours | Maximum Marks: 80

Student Name:	_____
Roll Number:	_____
Date:	_____

General Instructions:

1. All questions are compulsory.
2. The question paper is divided into 5 sections: A, B, C, D, and E.
3. Section A: Multiple Choice Questions (1 mark each) - 15 marks
4. Section B: Fill in the Blanks / True-False (1 mark each) - 15 marks
5. Section C: Short Answer Questions (2 marks each) - 20 marks
6. Section D: Long Answer Questions (3 marks each) - 15 marks
7. Section E: Practical/Programming Questions (5 marks each) - 15 marks
8. Write neatly and legibly.
9. For programming questions, write complete code with proper syntax.

SECTION A - Multiple Choice Questions (15 Marks)

Q1. Which operator is used for not equal to in Python? **[1]**

(a) =!

(b) !=

(c) <>

(d) ~=

Q2. What is the purpose of the <form> tag in HTML? **[1]**

(a) To create tables

(b) To collect user input

(c) To create lists

(d) To insert images

Q3. Which attribute is used with <img> tag to specify image source? **[1]**

(a) href

(b) src

(c) link

(d) url

Q4. What does WWW stand for? **[1]**

(a) World Wide Web

(b) World Web Wide

(c) Wide World Web

(d) Web World Wide

Q5. Which of the following is an example of AI? **[1]**

(a) Calculator

(b) Google Assistant

(c) MS Word

(d) Paint

Q6. In Python, what is the correct syntax for a comment? **[1]**

(a) // This is a comment

(b) /* This is a comment */

(c) # This is a comment

(d) <!-- This is a comment -->

Q7. Which HTML tag creates an unordered list? **[1]**

(a)

(b)

(c) <list>

(d)

Q8. What is the output of: print(10 % 3)? **[1]**

(a) 3

(b) 1

(c) 0

(d) 3.33

Q9. Which of the following is a web browser? **[1]**

(a) Google

(b) Chrome

(c) YouTube

(d) Windows

Q10. What is Deep Learning? **[1]**

(a) Learning in deep water

(b) A subset of Machine Learning using neural networks

(c) Learning deeply about a subject

(d) A type of database

Q11. The <th> tag in HTML stands for: **[1]**

(a) Table height

(b) Table header

(c) Table head

(d) Table horizontal

Q12. Which of the following is used for online shopping? **[1]**

(a) E-mail

(b) E-commerce

(c) E-learning

(d) E-banking

Q13. In Python, which keyword is used with if to check another condition? **[1]**

(a) elseif

(b) elif

(c) elsif

(d) else if

Q14. What does the <br> tag do in HTML? **[1]**

(a) Creates a border

(b) Makes text bold

(c) Creates a line break

(d) Creates a horizontal line

Q15. Which AI technology is used in self-driving cars? **[1]**

(a) Natural Language Processing

(b) Computer Vision

(c) Text Processing

(d) Data Entry

SECTION B - Fill in the Blanks / True-False (15 Marks)

Q16. The _____ statement is used to check multiple conditions in Python. **[1]**

Q17. In HTML, the <input> tag is used inside _____ tag to collect user data. **[1]**

Q18. The process of buying and selling goods online is called _____. **[1]**

Q19. _____ is a popular video calling application owned by Microsoft. **[1]**

Q20. AI systems that can understand and respond to human language use _____ _____ Processing. **[1]**

Q21. True or False: Python uses curly braces {} to define code blocks. **[1]**

_____

Q22. True or False: The <h1> tag creates the largest heading in HTML. **[1]**

_____

Q23. True or False: FTP stands for File Transfer Protocol. _____ **[1]**

Q24. The _____ attribute in <input> tag specifies the type of input field. **[1]**

Q25. _____ _____ is an AI technique where computers learn to recognize images. **[1]**

Q26. True or False: Nested if means one if statement inside another if statement. **[1]**

_____

Q27. The <hr> tag in HTML creates a _____ _____. **[1]**

Q28. True or False: Social media is an internet service. _____ **[1]**

Q29. _____ is the most popular search engine in the world. **[1]**

Q30. True or False: Robots use AI to perform tasks automatically. _____ **[1]**

SECTION C - Short Answer Questions (20 Marks)

Q31. What is nested if in Python? Write a simple example. **[2]**

Q32. Explain the difference between <input type="text"> and <input type="password"> in HTML. **[2]**

Q33. What is the difference between WWW and Internet? **[2]**

Q34. Write HTML code to create a form with one text input field and a submit button. **[2]**

Q35. What is Natural Language Processing (NLP)? Give two examples. **[2]**

Q36. Explain the use of 'and' and 'or' operators in Python with examples. **[2]**

Q37. What is the purpose of the bgcolor attribute in HTML? Write an example. **[2]**

Q38. Write two advantages of using email over traditional mail. **[2]**

Q39. What is Computer Vision? Give one real-life application. **[2]**

Q40. What will be the output of the following Python code? **[2]**

```
x = 10
y = 5
if x > y:
    print("Yes")
else:
    print("No")
```

SECTION D - Long Answer Questions (15 Marks)

Q41. Explain nested if-else in Python with a program to check whether a number is positive even, positive odd, negative even, or negative odd. **[3]**

Q42. Write complete HTML code to create a registration form with the following fields: **[3]**

- Name (text input)
- Email (email input)
- Password (password input)
- Gender (radio buttons: Male/Female)
- Submit button

Q43. What is e-commerce? Explain its advantages and disadvantages with examples. **[3]**

Q44. Explain the following AI concepts with examples: **[3]**

- (a) Machine Learning
- (b) Natural Language Processing
- (c) Robotics

Q45. Write HTML code to create a webpage about "My School" containing: **[3]**

- A heading with school name
- A paragraph about the school
- An ordered list of 3 facilities
- An image (assume school.jpg)
- Background color

SECTION E - Practical/Programming Questions (15 Marks)

Q46. Write a Python program using nested if-else to find the greatest of three numbers entered by the user. **[5]**

Q47. Write a Python program to check if a year entered by the user is a leap year or not using if-else. **[5]**

Rules: A year is leap if:

- It is divisible by 4 AND not divisible by 100
- OR it is divisible by 400

Q48. Create a complete HTML webpage for "Student Feedback Form" with: **[5]**

- Form heading
- Student name input
- Class dropdown (7, 8, 9, 10)
- Feedback textarea
- Rating radio buttons (Excellent, Good, Average, Poor)
- Submit and Reset buttons
- Proper colors and formatting

ANSWER KEY

Class 7 - Computer Science Annual Exam 2025-26 (Set 2)

Section A - Multiple Choice Questions Answers

Q1. Answer: (b) !=

Explanation: The != operator is used to check if two values are not equal in Python. For example, 5 != 3 returns True.

> *Marking: 1 mark for correct answer*

Q2. Answer: (b) To collect user input

Explanation: The <form> tag is used to create HTML forms that collect user input through various input elements like text fields, checkboxes, radio buttons, etc.

> *Marking: 1 mark for correct answer*

Q3. Answer: (b) src

Explanation: The src (source) attribute specifies the path/URL of the image to be displayed. Example: <img src="photo.jpg">

> *Marking: 1 mark for correct answer*

Q4. Answer: (a) World Wide Web

Explanation: WWW stands for World Wide Web, which is a system of interlinked hypertext documents accessed via the Internet.

> *Marking: 1 mark for correct answer*

Q5. Answer: (b) Google Assistant

Explanation: Google Assistant is an AI-powered virtual assistant that uses Natural Language Processing to understand and respond to voice commands.

> *Marking: 1 mark for correct answer*

Q6. Answer: (c) # This is a comment

Explanation: In Python, comments start with the # symbol. Everything after # on that line is ignored by the interpreter.

> *Marking: 1 mark for correct answer*

Q7. Answer: (b)

Explanation: The <ul> tag creates an unordered (bulleted) list in HTML. Each list item is defined with <li> tag.

> *Marking: 1 mark for correct answer*

Q8. Answer: (b) 1

Explanation: The % operator is the modulus operator which returns the remainder. 10 divided by 3 gives quotient 3 and remainder 1.

> *Marking: 1 mark for correct answer*

Q9. Answer: (b) Chrome

Explanation: Chrome (Google Chrome) is a web browser used to access websites on the internet. Other browsers include Firefox, Safari, Edge.

> *Marking: 1 mark for correct answer*

Q10. Answer: (b) A subset of Machine Learning using neural networks

Explanation: Deep Learning is a subset of Machine Learning that uses artificial neural networks with multiple layers to learn from large amounts of data.

> *Marking: 1 mark for correct answer*

Q11. Answer: (b) Table header

Explanation: The <th> tag defines a header cell in an HTML table. Header cells are typically bold and centered by default.

> *Marking: 1 mark for correct answer*

Q12. Answer: (b) E-commerce

Explanation: E-commerce (Electronic Commerce) refers to buying and selling goods and services online. Examples: Amazon, Flipkart, eBay.

> *Marking: 1 mark for correct answer*

Q13. Answer: (b) elif

Explanation: The elif keyword (short for "else if") is used in Python to check additional conditions after the initial if condition.

> *Marking: 1 mark for correct answer*

Q14. Answer: (c) Creates a line break

Explanation: The <br> tag inserts a single line break in HTML. It's an empty tag that doesn't require a closing tag.

> *Marking: 1 mark for correct answer*

Q15. Answer: (b) Computer Vision

Explanation: Self-driving cars use Computer Vision to recognize and interpret their surroundings, including roads, traffic signs, pedestrians, and other vehicles.

> *Marking: 1 mark for correct answer*

Section B - Fill in the Blanks / True-False Answers

Q16. Answer: elif

Explanation: The elif (else if) statement allows checking multiple conditions in sequence in Python.

> *Marking: 1 mark for correct answer*

Q17. Answer: <form>

Explanation: The <input> tag is placed inside the <form> tag to create form fields for collecting user data.

> *Marking: 1 mark for correct answer*

Q18. Answer: E-commerce / Electronic Commerce

Explanation: E-commerce refers to commercial transactions conducted electronically on the internet.

> *Marking: 1 mark for correct answer*

Q19. Answer: Skype

Explanation: Skype is a popular video calling and messaging application owned by Microsoft. (Microsoft Teams is also acceptable)

> *Marking: 1 mark for correct answer*

Q20. Answer: Natural Language

Explanation: Natural Language Processing (NLP) enables AI systems to understand, interpret, and generate human language.

> *Marking: 1 mark for correct answer*

Q21. Answer: False

Explanation: Python uses indentation (whitespace) to define code blocks, not curly braces. Languages like C, Java, JavaScript use curly braces.

> *Marking: 1 mark for correct answer*

Q22. Answer: True

Explanation: The <h1> tag creates the largest heading in HTML. Headings range from <h1> (largest) to <h6> (smallest).

> *Marking: 1 mark for correct answer*

Q23. Answer: True

Explanation: FTP stands for File Transfer Protocol, which is used to transfer files between computers over a network.

> *Marking: 1 mark for correct answer*

Q24. Answer: type

Explanation: The type attribute specifies what kind of input field to display (text, password, email, number, etc.).

> *Marking: 1 mark for correct answer*

Q25. Answer: Computer Vision

Explanation: Computer Vision is an AI field that trains computers to interpret and understand visual information from images and videos.

> *Marking: 1 mark for correct answer*

Q26. Answer: True

Explanation: Nested if means placing one if statement inside another if or else block to check multiple conditions sequentially.

> *Marking: 1 mark for correct answer*

Q27. Answer: horizontal line / horizontal rule

Explanation: The <hr> tag creates a thematic break or horizontal line in HTML to separate content.

> *Marking: 1 mark for correct answer*

Q28. Answer: True

Explanation: Social media platforms (Facebook, Instagram, Twitter) are internet services that enable online communication and content sharing.

> *Marking: 1 mark for correct answer*

Q29. Answer: Google

Explanation: Google is the world's most popular search engine, processing billions of searches daily.

> *Marking: 1 mark for correct answer*

Q30. Answer: True

Explanation: Modern robots use AI algorithms to perform tasks automatically, make decisions, and adapt to changing environments.

> *Marking: 1 mark for correct answer*

Section C - Short Answer Questions Answers

Q31. Answer: Nested if in Python

Definition: Nested if means placing one if statement inside another if or else statement. It allows checking multiple conditions where the inner condition is evaluated only if the outer condition is true.

Simple Example:

```
age = 20
if age >= 18:
    if age >= 21:
        print("You can drive and vote")
    else:
        print("You can vote only")
else:
    print("You cannot vote")
```

Explanation: The outer if checks if age is 18 or above. If true, the inner if checks if age is 21 or above for additional permissions.

> *Marking: 1 mark for definition, 1 mark for example (2 marks total)*

Q32. Answer: Difference between text and password input types

<input type="text">	**<input type="password">**
Characters are visible while typing	Characters are hidden (shown as dots/asterisks)
Used for normal text input like name, address	Used for sensitive data like passwords
Example: <input type="text" name="username">	Example: <input type="password" name="pwd">

> *Marking: 1 mark for each difference/explanation (2 marks total)*

Q33. Answer: Difference between WWW and Internet

Aspect	Internet	World Wide Web (WWW)
Definition	Global network of interconnected computers	Collection of web pages accessed via Internet
Nature	Infrastructure/Hardware network	Service that runs on Internet
Components	Cables, routers, servers, computers	Websites, web pages, hyperlinks
Example	The physical network connecting devices	Websites like Google.com, Facebook.com

In simple terms: Internet is like a highway system, while WWW is one type of traffic (websites) that uses that highway.

> *Marking: 1 mark for each key difference (2 marks total)*

Q34. Answer: HTML form with text input and submit button

```
<form>
    <label>Enter your name:</label>
    <input type="text" name="username">
    <br><br>
    <input type="submit" value="Submit">
</form>
```

Alternative with better formatting:

```
<form action="#" method="post">
    Name: <input type="text" name="name"
placeholder="Enter your name"><br><br>
    <input type="submit" value="Submit Form">
</form>
```

Marking: 1 mark for form structure, 0.5 marks for text input, 0.5 marks for submit button (2 marks total)

Q35. Answer: Natural Language Processing (NLP)

Definition: Natural Language Processing (NLP) is a branch of Artificial Intelligence that deals with the interaction between computers and human language. It enables computers to understand, interpret, generate, and respond to human language in a meaningful way.

Two Examples of NLP:

1. **Voice Assistants:** Siri, Alexa, and Google Assistant use NLP to understand voice commands and respond appropriately. For example, when you ask "What's the weather today?", NLP helps understand the question and provide relevant information.
2. **Language Translation:** Google Translate uses NLP to translate text from one language to another while maintaining meaning and context.

Other examples: Chatbots, spam email filters, autocorrect, sentiment analysis

Marking: 1 mark for definition, 0.5 marks for each example (2 marks total)

Q36. Answer: 'and' and 'or' operators in Python

The 'and' Operator:

Returns True only when BOTH conditions are true. If any condition is false, the result is false.

```
# Example of 'and' operator
age = 25
salary = 30000
if age >= 18 and salary >= 20000:
    print("Eligible for loan")
else:
    print("Not eligible")

# Output: Eligible for loan (both conditions are true)
```

The 'or' Operator:

Returns True when AT LEAST ONE condition is true. It's false only when all conditions are false.

```
# Example of 'or' operator
day = "Sunday"
if day == "Saturday" or day == "Sunday":
    print("It's a weekend!")
else:
    print("It's a weekday")

# Output: It's a weekend! (one condition is true)
```

Operator	Returns True when
and	ALL conditions are true
or	AT LEAST ONE condition is true

> *Marking: 0.5 marks for each operator explanation + 0.5 marks for each example (2 marks total)*

Q37. Answer: Purpose of bgcolor attribute

Purpose: The bgcolor attribute is used to set the background color of HTML elements like body, table, table cells, etc. It makes the webpage more attractive and improves readability.

Examples:

```
<!-- Setting background color for entire page -->
<body bgcolor="lightblue">
    <h1>Welcome to My Website</h1>
</body>

<!-- Setting background color for table -->
<table bgcolor="yellow" border="1">
    <tr>
        <td>Cell 1</td>
        <td>Cell 2</td>
    </tr>
</table>

<!-- Setting background for specific cell -->
<td bgcolor="pink">Highlighted Cell</td>
```

Note: Modern HTML5 recommends using CSS instead of bgcolor attribute, but bgcolor is still supported for basic coloring.

> *Marking: 1 mark for purpose, 1 mark for example (2 marks total)*

Q38. Answer: Two advantages of email over traditional mail

1. **Speed and Instant Delivery:** Emails are delivered within seconds anywhere in the world, whereas traditional mail can take days or weeks to reach the recipient. This makes email ideal for urgent communication.
2. **Cost-Effective:** Sending emails is free (only requires internet connection), while traditional mail requires stamps, envelopes, and postal charges. You can send unlimited emails without any additional cost.

Other advantages:

- Can attach documents, images, and files
- Messages are stored digitally and can be easily searched
- Can send to multiple recipients simultaneously
- 24/7 availability - can send/receive anytime
- Environmentally friendly (no paper waste)

> *Marking: 1 mark for each advantage with proper explanation (2 marks total)*

Q39. Answer: Computer Vision

Definition: Computer Vision is a field of Artificial Intelligence that trains computers to interpret and understand visual information from the world through images and videos. It enables machines to "see" and make decisions based on visual input, similar to how humans use their eyes and brain.

Real-life Application:

Facial Recognition for Phone Unlocking: Modern smartphones use computer vision to recognize the owner's face and unlock the device. The camera captures your face, and AI algorithms compare it with stored facial data to verify your identity. Examples include Face ID on iPhones and face unlock on Android phones.

Other applications: Self-driving cars (detecting roads and obstacles), medical imaging (detecting diseases in X-rays), quality control in manufacturing, augmented reality filters on Instagram/Snapchat

> *Marking: 1 mark for definition, 1 mark for real-life application (2 marks total)*

Q40. Answer: Output of Python code

Code Analysis:

```
x = 10
y = 5
if x > y:
    print("Yes")
else:
    print("No")
```

Output: Yes

Explanation:

- x is assigned value 10
- y is assigned value 5
- The condition checks if x > y, which means 10 > 5
- Since 10 is greater than 5, the condition is True
- Therefore, the if block executes and prints "Yes"
- The else block is skipped

> *Marking: 1 mark for correct output, 1 mark for explanation (2 marks total)*

Section D - Long Answer Questions Answers

Q41. Answer: Nested if-else to check positive/negative even/odd

Explanation: Nested if-else means placing one if-else inside another. In this program, we first check if the number is positive or negative (outer if), then check if it's even or odd (inner if).

Complete Program:

```
# Program to check positive/negative and even/odd using
nested if-else

print("***** NUMBER CLASSIFIER *****")
print()

# Taking input from user
num = int(input("Enter a number: "))

# Nested if-else to classify the number
if num > 0:
    # Number is positive
    if num % 2 == 0:
        print(f"{num} is POSITIVE and EVEN")
    else:
        print(f"{num} is POSITIVE and ODD")
elif num < 0:
    # Number is negative
    if num % 2 == 0:
        print(f"{num} is NEGATIVE and EVEN")
    else:
        print(f"{num} is NEGATIVE and ODD")
else:
    # Number is zero
```

```
    print("The number is ZERO (neither positive nor
negative)")
```

Sample Outputs:

```
Test Case 1:
Enter a number: 12
12 is POSITIVE and EVEN

Test Case 2:
Enter a number: 15
15 is POSITIVE and ODD

Test Case 3:
Enter a number: -8
-8 is NEGATIVE and EVEN

Test Case 4:
Enter a number: -7
-7 is NEGATIVE and ODD

Test Case 5:
Enter a number: 0
The number is ZERO (neither positive nor negative)
```

How it works:

1. Outer if checks if number > 0 (positive)
2. If positive, inner if checks if divisible by 2 (even) or not (odd)
3. Outer elif checks if number < 0 (negative)
4. If negative, inner if again checks even/odd
5. Outer else handles the case when number is 0

Marking: 1 mark for explanation, 1.5 marks for correct nested structure, 0.5 marks for testing/output (3 marks total)

Q42. Answer: HTML Registration Form

```
<!DOCTYPE html>
<html>
<head>
    <title>Registration Form</title>
</head>
<body bgcolor="#f0f8ff">

    <h1 style="text-align: center; color:
#1e5a96;">Student Registration Form</h1>

    <form action="#" method="post">
        <table border="0" cellpadding="10">

            <!-- Name Field -->
            <tr>
                <td><label>Full Name:</label></td>
                <td><input type="text" name="fullname"
placeholder="Enter your name" required></td>
            </tr>

            <!-- Email Field -->
            <tr>
                <td><label>Email Address:</label></td>
                <td><input type="email" name="email"
placeholder="Enter your email" required></td>
            </tr>
```

```
            <!-- Password Field -->
            <tr>
                <td><label>Password:</label></td>
                <td><input type="password"
name="password" placeholder="Enter password" required>
</td>
            </tr>

            <!-- Gender Radio Buttons -->
            <tr>
                <td><label>Gender:</label></td>
                <td>
                    <input type="radio" name="gender"
value="male"> Male
                    <input type="radio" name="gender"
value="female"> Female
                </td>
            </tr>

            <!-- Submit Button -->
            <tr>
                <td colspan="2" align="center">
                    <input type="submit"
value="Register Now">
                </td>
            </tr>

        </table>
    </form>

</body>
</html>
```

Key Points Explained:

Element	Purpose
type="text"	Creates a normal text input field for name
type="email"	Creates email input with validation
type="password"	Hides characters while typing password
type="radio"	Creates radio buttons (only one can be selected)
name attribute	Same name for radio buttons groups them together
required	Makes field mandatory before submission

> *Marking: 0.5 marks each for name, email, password fields; 0.5 marks for radio buttons; 0.5 marks for submit button; 0.5 marks for proper form structure (3 marks total)*

Q43. Answer: E-commerce - Definition, Advantages, and Disadvantages

Definition: E-commerce (Electronic Commerce) refers to the buying and selling of goods and services over the internet using electronic devices. It includes online shopping, digital payments, and internet banking. Examples include Amazon, Flipkart, eBay, and online grocery stores.

Advantages of E-commerce:

1. **24/7 Availability:** Online stores are open round the clock, allowing customers to shop anytime, anywhere, unlike physical stores with fixed hours.
2. **Convenience:** Customers can shop from home without traveling to physical stores, saving time and effort.
3. **Wide Variety:** Access to unlimited products from different sellers worldwide, with easy price comparison.

4. **Cost-Effective:** Often cheaper than physical stores due to reduced overhead costs. Many discounts and offers are available.
5. **Home Delivery:** Products are delivered directly to the customer's doorstep.

Disadvantages of E-commerce:

1. **No Physical Examination:** Customers cannot touch, feel, or try products before buying, which may lead to dissatisfaction.
2. **Security Concerns:** Risk of credit card fraud, identity theft, and payment security issues.
3. **Delivery Delays:** Products may take time to deliver, and shipping charges may apply.
4. **Internet Dependency:** Requires internet connection and digital literacy, which may not be accessible to everyone.
5. **Product Quality Issues:** Actual product may differ from online images; return process can be complicated.

Examples: Amazon (global marketplace), Flipkart (Indian e-commerce), Swiggy/Zomato (food delivery), BookMyShow (ticket booking)

> *Marking: 0.5 marks for definition, 1.5 marks for advantages with examples, 1 mark for disadvantages (3 marks total)*

Q44. Answer: Three AI Concepts with Examples

(a) Machine Learning:

Definition: Machine Learning is a subset of AI where computers learn from data and improve their performance over time without being explicitly programmed for every task. The system identifies patterns in data and makes predictions or decisions based on those patterns.

Examples:

- **Netflix/YouTube Recommendations:** These platforms learn from your viewing history and recommend movies/videos you might like
- **Spam Email Filtering:** Gmail learns to identify spam emails by analyzing patterns in millions of emails
- **Online Shopping Recommendations:** Amazon suggests products based on your browsing and purchase history

(b) Natural Language Processing (NLP):

Definition: NLP is an AI technology that enables computers to understand, interpret, and respond to human language (both written and spoken). It bridges the gap between human communication and computer understanding.

Examples:

- **Voice Assistants:** Siri, Alexa, Google Assistant understand voice commands and respond in natural language
- **Language Translation:** Google Translate converts text from one language to another while preserving meaning
- **Chatbots:** Customer service chatbots on websites answer queries in natural conversation

(c) Robotics:

Definition: Robotics combines AI with mechanical engineering to create intelligent machines (robots) that can perform physical tasks automatically. These robots can sense their environment, make decisions, and execute actions.

Examples:

- **Manufacturing Robots:** Used in car factories to assemble vehicles with precision and speed
- **Surgical Robots:** Assist doctors in performing complex surgeries with high accuracy
- **Vacuum Cleaning Robots:** Roomba and similar robots that automatically clean floors by navigating around obstacles

- **Delivery Robots:** Used by some restaurants and stores to deliver orders

Marking: 1 mark for each concept with proper definition and examples (3 marks total)

Q45. Answer: HTML Webpage about "My School"

```
<!DOCTYPE html>
<html>
<head>
    <title>My School</title>
</head>
<body bgcolor="#e8f5e9">

    <!-- School Name Heading -->
    <h1 style="text-align: center; color:
#2e7d32;">Saraswati Vidya Mandir</h1>

    <hr>

    <!-- Paragraph about the school -->
    <h2 style="color: #1565c0;">About Our School</h2>
    <p style="font-size: 16px; line-height: 1.8;">
        Saraswati Vidya Mandir is a premier educational
institution established in 1985.
        Our school is committed to providing quality
education and overall development of
        students. We have experienced teachers, modern
infrastructure, and a conducive
        learning environment. Our school believes in
nurturing young minds to become
        responsible citizens of tomorrow. We focus on
both academic excellence and
        extracurricular activities to ensure holistic
```

```
development.
    </p>

    <!-- Ordered list of facilities -->
    <h2 style="color: #1565c0;">School Facilities</h2>
    <ol type="1" style="font-size: 16px;">
        <li><strong>Well-Equipped Computer Lab:
</strong> Modern computers with internet facility
            and latest software for practical
learning</li>
        <li><strong>Library:</strong> A vast collection
of books, magazines, and reference
            materials for students and teachers</li>
        <li><strong>Sports Complex:</strong>
Playground, indoor games room, and equipment
            for various sports activities</li>
    </ol>

    <!-- School Image -->
    <h2 style="color: #1565c0;">Our Campus</h2>
    <center>
        <img src="school.jpg" alt="School Building"
width="500" border="2">
        <p><em>Beautiful campus of Saraswati Vidya
Mandir</em></p>
    </center>

    <hr>

    <p style="text-align: center; font-weight: bold;
margin-top: 30px;">
        © 2025 Saraswati Vidya Mandir. All Rights
Reserved.
```

```
    </p>

</body>
</html>
```

Elements Included:

Requirement	Implementation
Heading with school name	<h1> tag with center alignment and color
Paragraph about school	<p> tag with detailed description
Ordered list of 3 facilities	tag with 3 items
Image	<img> tag with src="school.jpg"
Background color	bgcolor="#e8f5e9" (light green)

Marking: 0.5 marks for heading, 0.5 marks for paragraph, 0.75 marks for ordered list, 0.5 marks for image, 0.25 marks for background color, 0.5 marks for overall presentation (3 marks total)

Section E - Practical/Programming Questions Answers

Q46. Answer: Python program to find greatest of three numbers using nested if-else

Program:

```
# Program to find the greatest of three numbers using
nested if-else
```

```
print("=" * 50)
print("FIND THE GREATEST OF THREE NUMBERS")
print("=" * 50)
print()

# Taking input from user
num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))
num3 = int(input("Enter third number: "))

print()
print("-" * 50)

# Method 1: Using nested if-else
if num1 >= num2:
    # num1 is greater than or equal to num2
    if num1 >= num3:
        greatest = num1
    else:
        greatest = num3
else:
    # num2 is greater than num1
    if num2 >= num3:
        greatest = num2
    else:
        greatest = num3

print(f"The greatest number among {num1}, {num2}, and
{num3} is: {greatest}")
print("-" * 50)
```

Alternative Method - More Detailed:

```
# Alternative approach with detailed nested conditions

num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))
num3 = int(input("Enter third number: "))

if num1 >= num2:
    if num1 >= num3:
        print(f"{num1} is the greatest")
    else:
        print(f"{num3} is the greatest")
else:
    if num2 >= num3:
        print(f"{num2} is the greatest")
    else:
        print(f"{num3} is the greatest")
```

Sample Outputs:

```
Test Case 1:
Enter first number: 45
Enter second number: 78
Enter third number: 32
The greatest number among 45, 78, and 32 is: 78

Test Case 2:
Enter first number: 90
Enter second number: 45
Enter third number: 120
The greatest number among 90, 45, and 120 is: 120

Test Case 3:
```

```
Enter first number: 50
Enter second number: 50
Enter third number: 30
The greatest number among 50, 50, and 30 is: 50
```

Logic Explanation:

1. **Outer if:** Compare num1 and num2
2. **If num1 >= num2:** num1 is potentially the greatest
    - **Inner if:** Compare num1 with num3
    - If num1 >= num3: num1 is greatest
    - Else: num3 is greatest
3. **Else:** num2 is greater than num1
    - **Inner if:** Compare num2 with num3
    - If num2 >= num3: num2 is greatest
    - Else: num3 is greatest

Flowchart Logic:

```
Start
  ↓
Input num1, num2, num3
  ↓
Is num1 >= num2?
  ├── Yes → Is num1 >= num3?
  │          ├── Yes → num1 is greatest
  │          └── No → num3 is greatest
  └── No → Is num2 >= num3?
             ├── Yes → num2 is greatest
             └── No → num3 is greatest
  ↓
End
```

> *Marking: 1 mark for input, 3 marks for correct nested if-else logic, 0.5 marks for output, 0.5 marks for testing/comments (5 marks total)*

Q47. Answer: Python program to check leap year

Program:

```
# Program to check if a year is a leap year

print("***** LEAP YEAR CHECKER *****")
print()

# Taking input from user
year = int(input("Enter a year: "))

# Leap year logic using if-else
# A year is leap if:
# 1. Divisible by 4 AND not divisible by 100
# 2. OR divisible by 400

if (year % 4 == 0 and year % 100 != 0) or (year % 400
== 0):
    print(f"{year} is a LEAP YEAR")
    print("This year has 366 days (February has 29
days)")
else:
    print(f"{year} is NOT a LEAP YEAR")
    print("This year has 365 days (February has 28
days)")

print()
print("=" * 50)
```

Alternative Method with Detailed Steps:

```
# Alternative approach with step-by-step checking

year = int(input("Enter a year: "))

if year % 400 == 0:
    # Divisible by 400 → Always leap year
    print(f"{year} is a LEAP YEAR (divisible by 400)")
elif year % 100 == 0:
    # Divisible by 100 but not 400 → Not leap year
    print(f"{year} is NOT a LEAP YEAR (divisible by 100 but not 400)")
elif year % 4 == 0:
    # Divisible by 4 but not 100 → Leap year
    print(f"{year} is a LEAP YEAR (divisible by 4 but not 100)")
else:
    # Not divisible by 4 → Not leap year
    print(f"{year} is NOT a LEAP YEAR (not divisible by 4)")
```

Sample Outputs:

```
Test Case 1:
Enter a year: 2024
2024 is a LEAP YEAR
This year has 366 days (February has 29 days)

Test Case 2:
Enter a year: 2023
2023 is NOT a LEAP YEAR
This year has 365 days (February has 28 days)
```

```
Test Case 3:
Enter a year: 2000
2000 is a LEAP YEAR
This year has 366 days (February has 29 days)

Test Case 4:
Enter a year: 1900
1900 is NOT a LEAP YEAR
This year has 365 days (February has 28 days)
```

Leap Year Rules Explained:

Year Type	Rule	Example	Leap?
Divisible by 400	Always leap year	2000, 2400	YES
Divisible by 100	Not leap (unless also by 400)	1900, 2100	NO
Divisible by 4	Leap (unless also by 100)	2024, 2028	YES
Others	Not leap	2023, 2025	NO

Why these rules?

- Regular years have 365 days
- Earth takes 365.25 days to orbit the sun
- Every 4 years we add an extra day (leap year) to adjust
- But this overcorrects slightly, so years divisible by 100 are not leap years
- Except years divisible by 400, which are leap years to fine-tune the calendar

> *Marking: 1 mark for input, 3 marks for correct leap year logic using conditions, 0.5 marks for output messages, 0.5 marks for testing multiple cases (5 marks total)*

Q48. Answer: Complete HTML Student Feedback Form

```
<!DOCTYPE html>
<html>
<head>
    <title>Student Feedback Form</title>
</head>
<body bgcolor="#f5f5dc">

    <!-- Form Heading -->
    <h1 style="text-align: center; color: #8b0000;
background-color: #ffe4b5; padding: 15px;">
        📝 STUDENT FEEDBACK FORM
    </h1>

    <hr style="border: 2px solid #8b0000;">

    <p style="text-align: center; font-size: 16px;
color: #333;">
        We value your feedback! Please share your
thoughts about our school.
    </p>

    <!-- Feedback Form -->
    <form action="#" method="post">
        <table border="0" cellpadding="15"
align="center" width="60%" bgcolor="#ffffff"
style="box-shadow: 0 4px 8px rgba(0,0,0,0.2);">

            <!-- Student Name -->
            <tr>
                <td><label style="font-weight: bold;
color: #2c3e50;">Student Name:</label></td>
                <td>
                    <input type="text"
```

```
name="studentname" placeholder="Enter your full name"
                            size="30" required
style="padding: 5px;">
                </td>
            </tr>

            <!-- Class Dropdown -->
            <tr>
                <td><label style="font-weight: bold;
color: #2c3e50;">Class:</label></td>
                <td>
                    <select name="class" required
style="padding: 5px; width: 200px;">
                        <option value="">-- Select
Class --</option>
                        <option value="7">Class
7</option>
                        <option value="8">Class
8</option>
                        <option value="9">Class
9</option>
                        <option value="10">Class
10</option>
                    </select>
                </td>
            </tr>

            <!-- Feedback Textarea -->
            <tr>
                <td valign="top"><label style="font-
weight: bold; color: #2c3e50;">Your Feedback:</label>
</td>
                <td>
```

```
                    <textarea name="feedback" rows="6"
cols="35"
                              placeholder="Please write
your feedback here..."
                              required style="padding:
5px;"></textarea>
                </td>
            </tr>

            <!-- Rating Radio Buttons -->
            <tr>
                <td><label style="font-weight: bold;
color: #2c3e50;">Overall Rating:</label></td>
                <td>
                    <input type="radio" name="rating"
value="excellent" required>
                    <span style="color:
#27ae60;">⭐⭐⭐⭐⭐ Excellent</span><br>

                    <input type="radio" name="rating"
value="good">
                    <span style="color:
#3498db;">⭐⭐⭐⭐ Good</span><br>

                    <input type="radio" name="rating"
value="average">
                    <span style="color:
#f39c12;">⭐⭐⭐ Average</span><br>

                    <input type="radio" name="rating"
value="poor">
                    <span style="color: #e74c3c;">⭐⭐
Poor</span>
```

```
                </td>
            </tr>

            <!-- Submit and Reset Buttons -->
            <tr>
                <td colspan="2" align="center">
                    <input type="submit" value="Submit
Feedback"
                           style="background-color:
#27ae60; color: white; padding: 10px 30px;
                                  font-size: 16px;
border: none; cursor: pointer; border-radius: 5px;">
                       
                    <input type="reset" value="Clear
Form"
                           style="background-color:
#e74c3c; color: white; padding: 10px 30px;
                                  font-size: 16px;
border: none; cursor: pointer; border-radius: 5px;">
                </td>
            </tr>

        </table>
    </form>

    <br><br>

    <p style="text-align: center; color: #666; font-
size: 14px;">
        Thank you for taking the time to provide your
feedback! 🙏
    </p>
```

```
    <hr>

    <footer style="text-align: center; padding: 20px;
background-color: #34495e; color: white;">
        <p>© 2025 Math Love Institute. All Rights
Reserved.</p>
        <p>Contact: +91 7869553517 | Email:
info@mathlove.in</p>
    </footer>

</body>
</html>
```

Features Implemented:

Requirement	Implementation
Form heading	<h1> with styling and emoji
Student name input	<input type="text"> with placeholder and required
Class dropdown	<select> with 4 class options (7-10)
Feedback textarea	<textarea> with 6 rows and placeholder
Rating radio buttons	4 radio buttons with star emojis and colors
Submit button	Green button with custom styling
Reset button	Red button to clear form
Colors and formatting	Background colors, inline CSS, shadows, footer

Key HTML Elements Explained:

- **<select>:** Creates dropdown menu for class selection
- **<option>:** Individual choices in dropdown

- **<textarea>:** Multi-line text input for detailed feedback
- **type="radio":** Radio buttons where only one can be selected
- **type="submit":** Button to submit form data
- **type="reset":** Button to clear all form fields
- **required:** Makes field mandatory before submission
- **placeholder:** Shows hint text in input fields

Marking: 0.5 marks for heading, 0.5 marks for name input, 0.75 marks for dropdown, 0.75 marks for textarea, 1 mark for radio buttons with proper grouping, 0.5 marks for both buttons, 1 mark for colors and overall presentation (5 marks total)

Marking Summary

Section	Question Type	Total Marks
Section A	Multiple Choice Questions (15 × 1)	15 marks
Section B	Fill in the Blanks / True-False (15 × 1)	15 marks
Section C	Short Answer Questions (10 × 2)	20 marks
Section D	Long Answer Questions (5 × 3)	15 marks
Section E	Practical/Programming (3 × 5)	15 marks
TOTAL		80 marks

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Education is the Foundation of Life | शिक्षा ही जीवन का आधार है

This paper covers: Nested If-Else | HTML Forms | WWW & Internet Services | E-commerce | NLP & Computer Vision