St. Thomas' School, Sunari, Agra
Half-yearly Examination (2024-2025)
Class: VIII
Subject: Computer Studies
<mark>Specimen Paper</mark>

M. Time: 2 hours   **MM: 80**

Name: _____   **Section:** _____ **Roll no.:** _____

Question 1: Choose the correct answer and write the correct option. [10]

(i) Which of the following is a fundamental concept of programming?
(a) Syntax
(b) Algorithm
(c) Variable
(d) All of the above

(ii) Which of the following is an example of a loop control structure?
(a) if-else
(b) switch-case
(c) while
(d) break

(iii) In app development, which tool is primarily used to design the user interface?
(a) Code editor
(b) Database
(c) Layout editor
(d) Command line

(iv) Which protocol is commonly used for secure communication over the internet?
(a) HTTP
(b) FTP
(c) HTTPS
(d) TCP

(v) A control structure that allows you to execute a block of code multiple times is called:
(a) Condition
(b) Function
(c) Loop
(d) Variable

(vi) Which of the following is NOT a type of loop in programming?
(a) for
(b) do-while
(c) switch
(d) while

(vii) What is the purpose of a conditional statement in programming?
(a) To repeat a block of code
(b) To store data
(c) To make decisions

(d) To debug code

(viii) In networking, which device is used to connect multiple computers within a local area network (LAN)?
(a) Router
(b) Switch
(c) Modem
(d) Firewall

(ix) Which of the following is a popular app development platform?
(a) Python
(b) Android Studio
(c) SQL
(d) Adobe Photoshop

(x) Which topology in networking is known for its central hub or switch?
(a) Bus
(b) Ring
(c) Star
(d) Mesh

Question 2: Fill in the blanks with the correct answer. [10]
(i) In programming, a _____ is used to store data that can be changed during program execution.
(ii) The _____ loop will always execute its block of code at least once before checking the condition.
(iii) _____ is the process of creating a set of instructions that tell a computer how to perform a task.
(iv) In app development, _____ refers to the overall appearance and interactivity of an app.
(v) A _____ statement allows a program to choose different paths of execution based on conditions.
(vi) The _____ protocol is used for transferring files between a client and a server over a network.
(vii) _____ is a network topology where all devices are connected in a circular arrangement.
(viii) The _____ protocol is used for transmitting data securely over the internet.
(ix) An _____ is a finite set of instructions to solve a specific problem.
(x) _____ refers to the development of software applications for mobile devices.

Question 3: Write the following statements true or false. [10]
(i) An algorithm is a step-by-step procedure to solve a problem.
(ii) A "for" loop continues to execute as long as the condition is true.
(iii) HTTPS is less secure than HTTP.
(iv) In app development, UI refers to User Interface.
(v) A flowchart is used to visually represent an algorithm.
(vi) "if-else" is an example of a loop control structure.
(vii) A router connects different networks, while a switch connects devices within the same network.
(viii) Python is widely used in mobile app development.
(ix) In a star topology, all devices are connected to a central hub.
(x) The "while" loop in programming checks the condition before executing the block of code.

Question 4: One-word answer type question. [5]
(i) This loop in programming ensures that its code block executes at least once.
(ii) It is the process of creating software applications for smartphones.
(iii) It is a set of rules that governs data communication over a network.
(iv) In programming, it is used to repeat a block of code multiple times.
(v) This is the smallest unit of data storage in programming that can hold a value.

Question 5: Define the following terms. **[5]**
(i) Algorithm
(ii) Loop Control Structure
(iii) Mobile App Development
(iv) Protocol
(v) Networking Topology

Question 6: Application-based questions. **[6]**
(i) Rohan is developing a mobile app requiring users to log in. Which control structure should he use to ensure the correct username and password are entered?
(ii) Maya wants to repeat a certain process in her program until a specific condition is met. Which loop structure should she use?
(iii) During a networking class, Arjun learned about different topologies. Which topology should he recommend for a small office where all computers need to be connected to a central server?
(iv) In app development, Sita must create a form where users can enter their information. Which element should she use to take input from users?
(v) In a programming project, Akash needs to store data that changes frequently. Which programming concept should he use?
(vi) Tina is learning about secure communications. Which protocol should she use to ensure that the data sent over the internet is encrypted?

Question 7: Differentiate the following terms. **[4]**
(i) Algorithm and Flowchart
(ii) For Loop and While Loop
(iii) HTTP and HTTPS
(iv) Star Topology and Bus Topology

Question 8: Short answer type questions. **[10]**
(i) What is the role of control structures in programming? Explain with examples.
(ii) Describe how a flowchart can help in designing an algorithm, with an example.
(iii) What is a mobile app development platform? Name two popular platforms.
(iv) Outline the steps involved in creating a secure network using a router and firewall.
(v) Explain the importance of loops in programming with an example.

Question 9: Long answer type questions. **[20]**
(i) Discuss the different types of control structures in programming with examples.
(ii) Design an algorithm and corresponding flowchart to find the largest of three numbers.
(iii) Explain the basic concepts of mobile app development, including UI/UX design, coding, and testing.
(iv) Discuss the various types of network topologies and their advantages and disadvantages.
(v) Compare and contrast algorithms and flowcharts, highlighting their uses in problem-solving.