

Answers to this Paper must be written on the paper provided separately.

You will not be allowed to write during the first 15 minutes.

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

This Paper is divided into two Sections.

Attempt all questions from Section A and from Section B.

The intended marks for questions or parts of questions are given in brackets[ ].

### Section A

*(Attempt all questions from this section)*

#### Question 1

Choose the correct answer:

[20]

- (i) Buying or selling goods or services using electronic means is known as .....  
(a) money control (b) finance (c) e-commerce (d) mintmoney
- (ii) Which one of the following regenerate data at the signal level?  
(a) Bridge (b) Modem (c) Repeater (d) Router
- (iii) A control statement:  
(a) determines whether or not all other statements will be executed.  
(b) is used to alter flow of statements  
(c) makes decisions  
(d) offers facility to accept input  
Which of the above given options is not true about control statements?
- (iv) A hub is a network device:  
(a) that connects two types of networks with each other  
(b) transmits request to all computers  
(c) regenerate signals to strengthen them  
(d) acts as an entrance to another network
- (v) Cloud computing is a completely a \_\_\_\_\_ service.  
(a) LAN based (b) web based (c) resource based (d) program based
- (vi) \_\_\_\_\_ connects dissimilar networks.  
(a) switch (b) gateway (c) bridge (d) hub
- (vii) \_\_\_\_\_ are partly stored on local device and on partly on a remote server.  
(a) hybrid apps (b) web apps (c) native apps (d) common apps
- (viii) \_\_\_\_\_ are forms of data that can change values.  
(a) loops (b) control statements (c) flowcharts (d) variables

- (ix) What is a computer connected to a network known as?  
(a) node (b) device (c) unit (d) attachment
- (x) Which of these is not a type of statement in Java language?  
(a) if statement (b) if.....else....if statement  
(c) if....else statement (d) if.....elif...if statement
- (xi) **Assertion(A):** Conditional statements in Java allow you to execute different code blocks based on specified conditions.  
**Reason(R):** They enhance the flexibility and control of a Java program, providing branching based on logical tests.  
(a) both assertion and reason are true and reason is the correct explanation of assertion.  
(b) both assertion and reason are true and reason is not the correct explanation of assertion.  
(c) assertion is true but reason is false  
(d) assertion is false but reason is true
- (xii) MIT App Inventor is an open source web application originally provided by\_\_\_\_\_.  
(a) Apple (b) Microsoft (c) Google (d) Android
- (xiii) TCP does  
(a) File uploading (b) Retrieving mails  
(c) Involves in request and response (d) Dividing message into packets
- (xiv) A computer network used to share information, devices and other computing services only within an organization is  
(a) Internet (b) Intranet (c) Website (d) Client
- (xv) Airtel, Idea, BSNL etc are known as  
(a) ISP (b) URL (c) IP address (d) DNS
- (xvi) Camera, microphone etc are  
(a) Native apps (b) Hybrid apps (c) Web apps (d) Communication apps
- (xvii) Which of these is *not* a characteristic of a good algorithm?  
(a) Always begin an algorithm with 'Start'.  
(b) Statements in an algorithm should be ambiguous.  
(c) It should end in finite number of steps. (d) All of these.
- (xviii) Computers connected in an office that sprawls over a building is  
(a) LAN (b) MAN (c) WAN (d) PAN
- (xix) \_\_\_\_\_ is a broadcasting device.  
(a) Hub (b) Switch (c) Router (d) Gateway

- (xx) When statements in a program are executed in a linear manner, it is called  
(a) Iterative (b) Conditional (c) Sequential (d) none of these

## Question 2

Answer the following:

[20]

- (i) Network devices are physical devices that allow hardware on a computer network to interact and communicate with one another. In layman's terms, we can describe network devices in computer networks as the devices that connect fax machines, computers, printers, and other electronic devices to the network. You can quickly, safely, and accurately transfer data over one or more networks with the help of network devices. Network devices are also referred to as hardware and networking hardware.
- (a) Name some networking devices used to connect in different networks.
- (b) Explain a Modem.
- (ii) Flowcharts are the visual representations of an algorithm or a process. Flowcharts use symbols/shapes to properly explain the sequence of steps involved in the algorithm or process. Flowcharts have their use cases in various fields such as software development, business process modeling, and engineering.
- Explain any two symbols used in flowcharts.
- (iii) Programming control structures are fundamental elements used to dictate the flow of execution within a program, primarily through sequencing, selection, and iteration. They include constructs such as if-else statements, loops (for, while), and switch cases, helping programmers manage decision-making and repetitive tasks. Mastering control structures is essential for writing efficient and logical code, enabling the creation of complex and responsive software applications.
- (a) Name any two types control structures in java.
- (b) Name the control structure that can be used to check if a number is odd or even.
- (iv) Surili is drawing flowchart to calculate the volume of a cuboid. Name the symbols she will need to
- (a) read the sides of cuboid (b) calculate the volume
- (v) An app is a self-contained software package that allows users to perform specific tasks on a mobile or desktop device. Apps are pre-installed on your device or distributed via a proprietary app store such as the Apple App Store. Apps are typically written in different programming languages. Apps are classified into business apps, educational apps, travel apps and so on.
- (a) Candy Crush is a \_\_\_\_\_ app whereas \_\_\_\_\_ is an educational app.
- (b) Give two examples of e-commerce apps.

- (vi) Computer networks keep changing the way we live and do things in the 21st century. This is because virtually every computing activity or information sharing we do today depends on one form of network or another. The Internet is a very good example of a computer network that allows users to get information from any part of the world, using an internet-enabled device. Depending on the type of communication you want to achieve, a networking device such as a router or switch is often used when designing a computer network.
- Define a network.
  - Give two advantages of having a network.
- (vii) Cloud computing allows customers to scale up and down the resources any time.
- What is this characteristic of Cloud computing called as?
  - What is Google Drive?
- (viii) An algorithm is a set of steps for accomplishing a task or solving a problem. Typically, algorithms are executed by computers, but we also rely on algorithms in our daily lives. Each time we follow a particular step-by-step process, like making coffee in the morning or tying our shoelaces, we are in fact following an algorithm. In the context of computer science, an algorithm is a mathematical process for solving a problem using a finite number of steps. Algorithms are a key component of any computer program and are the driving force behind various systems and applications, such as navigation systems, search engines, and music streaming services.
- Write an algorithm to find the area of a circle .
- (ix) What are LinkedIn and Reddit?
- (x)
  - Which of these is a multiple branch statement-if-else or if-else-if ladder?
  - What are the units of measurement used to measure the speed of data flow in networks?

## Section B

*(Attempt all questions from this section)*

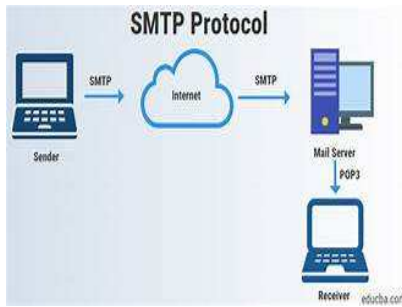
### Question 3

- (i) A mobile app (or mobile application) is a software application developed specifically for use on small, wireless computing devices, such as smartphones and tablets, rather than desktop or laptop computers. Mobile apps can be further classified.

[7]

On the basis of the paragraph given above write about the classification of mobile apps with 2 examples of each.

(ii)



[8]

Explain the protocols used in the image shown above.

#### Question 4

- (i) Write a program to print the corresponding days of numbers using if...else...if. [9]
- (ii) Expand the terms URL and DNS. Explain DNS. [6]

#### Question 5

- (i) Explain four advantages of cloud computing. [8]
- (ii) Write an algorithm to input values of height, base and hypotenuse of a triangle and display if it is right triangle or not. [7]

#### Question 6

- (i) Write a program in Java to check whether a given number is odd or even. [5]
- (ii) Draw a flowchart and write an algorithm for the above question. [10]

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