

9th Class

Computer Science	Model Paper 4	Paper: I
Time: 1.45 Hours	(Subjective Type)	Marks: 40

(Part-I)

2. Write short answers to any FOUR (4) questions: (8)

(i) What did Albert Einstein say about defining the problem and resolving it?

Ans Albert Einstein said, "If I were given one hour to save the planet, I would spend 59 minutes defining the problem and one minute resolving it."

(ii) Describe strategy of "act it out".

Ans In this strategy, the designer defines the list of "to-do" tasks. Afterwards he/she performs the task.

(iii) What does the symbol of connector work in flowchart?

Ans If a flowchart doesn't fit on a page, then we use connector to connect parts of a flowchart on different pages.

(iv) What is meant by start with reference to algorithm?

Ans It is the starting point of an algorithm. Every algorithm must have one starting (entry) point.

(v) Define verification.

Ans Verification means to test if the solution is actually solving the same problem for which it was designed. For example, if you are asked to give a solution for calculating compound interest, then verification means to know that it is giving results for compound interest not for the plain interest.

(vi) What is storage device?

Ans Any computing hardware that is used for storing, porting and extracting data, is called a storage device.

3. Write short answers to any FOUR (4) questions: (8)

(i) Define truth values.

Ans Every proposition takes one of two values true or false, and these values are called the truth values. Truth value is given on the basis of truthfulness or falsity of a proposition.

(ii) How many types of logical operators? Write their names.

Ans There are three types of logical operators:

1. AND operator (.).
2. OR operator (+).
3. NOT operator (-).

(iii) Express identity law of Boolean algebra.

Ans Identity Law:

If a variable is OR'ed with a False, the result is always equal to that variable. And if a variable is AND'ed with a True, the result is always equal to that variable.

(a) $A \text{ OR } \text{False} = A$, A variable OR'ed with False is always equal to that variable.

(b) $A \text{ AND } \text{True} = A$, A variable AND'ed with True is always equal to that variable.

(iv) Define network of networks.

Ans Networks are connected together to make a larger network which is called network of networks. The Internet is considered as the most well-known example of network of networks.

(v) What is point-to-point connection?

Ans A point-to-point connection is a direct link only between two devices, *i.e.*, a sender and a receiver. For example, there is a point-to-point connection between a remote control and a TV.

(vi) How is router installed?

Ans We get the Internet service from some Internet Service Provider (ISP). When we send a request from a device, it reaches an ISP where router is installed.

4. Write short answers to any FOUR (4) questions: (8)

(i) What is Piracy?

Ans Piracy means making illegal copies. It can be a book, software, movie, poetry, painting, house architecture or any other work protected by copyright law.

(ii) Write weaknesses and security flaws of substitution ciphers.

Ans Weaknesses and Security Flaws of Substitution Ciphers:

1. The simplest of all substitution ciphers are those in which the cipher alphabet is merely a cyclical shift of the plaintext alphabet. The explanation for this weakness is that the frequency distributions of symbols in the plaintext and in the ciphertext are identical, only the symbols having been relabelled.
2. Another major problem with simple substitution ciphers is that the frequencies of letters are not masked at all.

(iii) Define transaction fraud?

Ans Simple financial fraud is another common crime in the online arena. A scammer may offer an item for sale through an auction site with no intention of delivering once he/she receives payment. Alternatively, a criminal might purchase an item for sale using a stolen credit card. It is also possible to buy something from own credit card but then reporting the card stolen. This is a transactional fraud if the cardholder claims chargeback.

(iv) HTML is not case sensitive. Define briefly.

Ans HTML is not case sensitive. It means that a tag written uppercase is not different from the one written in lowercase. For example, the paragraph tag p can be written as <p> or <P>.

(v) How can we add headings/sub-headings.

Ans Headings are defined with the <h1> to <h6> tags. <h1> defines the most important heading. <h6> defines the least important heading. For example, <h1>Heading 1</h1> <h2>Heading 2 </h2> <h3>Heading 3 </h3> <h4>Heading 4 </h4> <h5>Heading 5 </h5> <h6>Heading 6 </h6> produces the output.

(vi) Write the procedure of creating a hyperlink to a webpage.

Ans The <a> tag is used to create a hyperlink in a webpage. The href attribute is used to specify the URL of the linked webpage. For example, Visit www.google.com makes the text "Visit www.google.com" a

hyperlink. If you click on this text in the webpage, it takes you to the website www.google.com.

(Part-II)

NOTE: Attempt any TWO (2) questions.

Q.5. Describe in detail how to select the best solution. (8)

Ans **Selecting the Best Solution:**

Sometimes, we find more than one solutions of a problem and select the best one amongst them. For example, assume that names of all the students in your school are available on a website and you are asked to search a particular name. You can solve this search problem by either of the following methods:

1. Look at each name on the website one by one until the name is found or the list is over.
2. Take printouts and search the required name.
3. Copy names, put them in Excel sheet and sort there in alphabetical order. Searching in a sorted list is comparatively easy.
4. Just press Ctrl+F, when the list is available in a web browser. You can type the name to search automatically.

There can be other solutions as well. Now we can identify a solution that has less number of steps or that seems more effective based on some criteria.

Q.6. Discuss in detail the need of a computer network with the help of examples. (8)

Ans **Need of a Computer Network:**

A computer network is established for the purpose of sharing resources. Examples of resource sharing are given below:

(i) File sharing:

Networking of computers helps a network user to share files. For example, if you need date sheet of your board examination, you can get the file through the Internet, without visiting BISE (Board of Intermediate and Secondary Education) office. Similarly, BISE requires your picture and your bio data for admission form. They can get all these files over a network. So, the file sharing is helpful to complete a task systematically.

Example:

If all your school teachers want to prepare a combined result using computers, they can share files over a school network or the Internet.

Moreover, sharing files with others who are living in a different city or even country is also much helpful and is done in the same way.

(ii) Hardware sharing:

Users can share devices such as printers, scanners, CD-RAM drives, hard disk drives, etc. For example, in an office, usually there are less number of printers and scanners than the available number of computers. Using a network, these resources are shared to get a cost-efficient solution.

(iii) Application sharing:

Applications can be shared over the network. It means that more than one users may use the same application. For example, in a bank; cashier, manager, ATM (automated teller machine) users use same application over the network. Bank balance updated at one point is updated for all branches immediately.

(iv) Sharing a single Internet connection:

Using a network at home or office, we can share one Internet connection with more than one user.

(v) User communication:

Networks allow users to communicate using e-mail, newsgroups, and video conferencing, etc. So, communication with many people sitting on different locations is possible due to a network.

Example:

A video conference comprises the technologies for the reception and transmission of audio-video signals by users at different locations.

(vi) Increasing storage capacity:

Storage capacity means the limit to store data in a computer. If we connect our computer to another computer having more storage, then we can also use the disk space of that computer. In this way, we can store and access files stored remotely. In this setup, a computer providing the storage is

called file server and the computer accessing that space is called a workstation.

Q.7. Discuss in detail the types of lists in HTML. (8)

Ans Types of Lists:

There are following three types of lists in HTML:

(i) Unordered List:

In an unordered list, the order of the list items is not important. In other words, shuffling of items in an unordered list has no effect. For example, list of cities in Pakistan. An unordered list is created inside the `` `` tags. Each list item is added with `` tag, as show below:

HTML Code Snippet	Output
<pre> Item Item Item Item </pre>	<ul style="list-style-type: none"> • Item • Item • Item • Item

(ii) Ordered List:

An ordered list keeps each list item with an order number. If you change the order, the meaning of the whole list may also change. For example, if your teacher makes a list of students with respect to their marks, then definitely order will matter.

An ordered list starts with `` and ends with `` tag. Each list item starts with `` tag, as shown below:

HTML Code Snippet	Output
<pre> First item Second item Third item Fourth item </pre>	<ol style="list-style-type: none"> 1. First item 2. Second item 3. Third item 4. Fourth item

(iii) Definition List:

There is another type of list, called "Definition list" or "Description list". It is used when you need to show some terms and their descriptions. For example, if you want to write names of subjects you are studying in 9th class along with their introduction, then this type of list is helpful. The `<dl>` tag is used to define the description list, the `<dt>` tag specifies the term,

and the <dd> tag describes that term as shown in the following example:

HTML Code Snippet	Output
<pre><dl> <dt>Coffee</dt> <dd> - black hot drink</dd> <dt>Milk</dt> <dd> - white cold drink</dd> </dl></pre>	<pre>Coffee - black hot drink Milk - white cold drink</pre>

(iv) Nested Lists:

In a list, a list item can contain another list. Such list is called a nested list. It is useful for situations where you have multiple options for a single item in a list e.g., for writing table of contents that contain sub-sections. For example, see the following code snippet and its output:

HTML Code Snippet	Output
<pre> Coffee Tea Black Coffee Green tea Milk </pre>	<pre>• Coffee • Tea ◦ Black Coffee ◦ Green tea • Milk</pre>