

CLASS 11

COMPUTER

CDC QUESTION

SOLUTION

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Model Question

Grade XI

Time 2 Hours

Group A: Multiple Choice Questions (9 x 1=9)

Tick the best alternative.

1. Which one of the following is an input device?

- a) speaker b) printer c) monitor

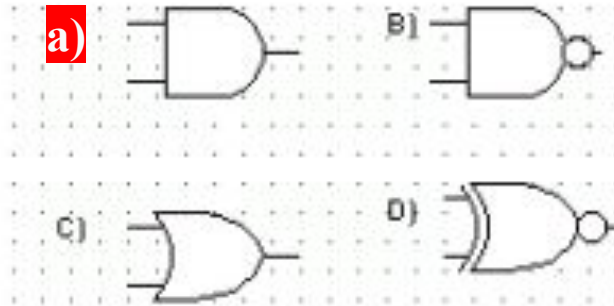
d) mouse

2. Which of the following is NOT a bus type?

- a) Address bus b) Data bus **c) Memory bus**

d) Control bus

3. How to represent Boolean $F(x,y)=x.y$ in logic gate?



4. Which scheduling algorithm allocates the CPU first to the process that requests the CPU first?

a) first-come, first-served scheduling

b) priority scheduling

c) shortest job scheduling

d) Round robin scheduling

5. Which operator is used to start for enter the formula in in Excel cell?

a) \$

b) @

c) =

d) +

6. Which looping process checks the test condition at the end of the loop?

a) for

b) while

d) do-while

d) Nested loop

7. How to insert an image in web page using HTML tag?

a)

<img=...>

a)

c)

d)

8. Which image format is best used for photographs and offers a small file size? (U)

a) PNG

b) GIF

c) BMP

d) JPEG

9. Which of following is monitors user activity on internet and transmit that information in the background to someone else? (U)

a) Malware

b) Spyware

c) Adware

d) Virus

Group 'B'

Give short answer to the following questions. (5 x 5=25)

1. Explain different types of secondary memory of computer system.

Answer : Secondary memory is non-volatile and used to store data permanently. The main types are:

- **Hard Disk Drive (HDD):** A magnetic storage device with high capacity used in most computers.
- **Solid State Drive (SSD):** Faster and more reliable than HDD, with no moving parts.
- **Optical Discs:** Includes CDs, DVDs, and Blu-ray discs used for media storage.
- **Flash Drives:** USB drives or pen drives used for portable data transfer.
- **Memory Cards:** Used in mobile phones, cameras, and other portable devices.

OR

Describe the decimal to binary number conversion process with example.

Answer : The decimal number system is based on 10 digits (0–9), whereas the binary number system uses only two digits: 0 and 1. Converting a decimal number to binary involves dividing the number by 2 repeatedly and recording the remainders.

Steps of Conversion:

1. Divide the decimal number by 2.
2. Write down the remainder.
3. Divide the quotient again by 2 and note the new remainder.
4. Repeat the process until the quotient becomes 0.
5. Write all the remainders in reverse order (from last to first) to get the binary number.

Example:

Convert 13 to binary:

$$13 \div 2 = 6 \text{ remainder } 1$$

$$6 \div 2 = 3 \text{ remainder } 0$$

$$3 \div 2 = 1 \text{ remainder } 1$$

$$1 \div 2 = 0 \text{ remainder } 1$$

Binary = 1101

2. What are the functions of operating system? Describe.

Answer : An Operating System (OS) is system software that manages computer hardware and software resources. It helps users interact with the computer and controls all basic functions of a computer system.

Main Functions:

1. **Process Management :** The OS handles the creation, scheduling, and termination of processes. It ensures smooth multitasking and proper use of the CPU.
2. **Memory Management :** It manages the computer's memory, keeping track of each byte and allocating memory to different programs when needed.
3. **File Management :** The OS organizes, stores, retrieves, and controls access to data and files on storage devices.
4. **Device Management :** It manages input and output devices like keyboard, mouse, printer, etc., using device drivers.
5. **User Interface :** The OS provides an interface like GUI (Graphical User Interface) or CLI (Command Line Interface) to interact with the computer easily.

3. Define different types of CSS.

Answer : Cascading Style Sheet (CSS) is used to set the style in web pages that contain HTML elements. It sets the background color, font-size, font- family, color,... etc property of elements on a web page. There are three types of CSS which are given below :

- Inline CSS
- Internal or Embedded CSS
- External CSS

Inline CSS: Inline CSS contains the CSS property in the body section attached with element is known as inline CSS. This kind of style is specified within an HTML tag using the style attribute.

Internal or Embedded CSS: This can be used when a single HTML document must be styled uniquely. The CSS rule set should be within the HTML file in the head section i.e the CSS is embedded within the HTML file.

External CSS: External CSS contains separate CSS file which contains only style property with the help of tag attributes (For example class, id, heading,... etc). CSS property written in a separate file with .css extension and should be linked

OR

Explain the different components of multimedia.

Answer : Multimedia refers to the combination of different content forms such as text, audio, images, animations, and video. Here are the five main components:

1. Text:
 - It is the most basic element of multimedia.
 - Used for titles, labels, instructions, or any content requiring reading.
2. Audio:
 - Includes sound effects, voice-overs, music, and speech.
 - Helps in enhancing the user experience and making content more engaging.
3. Images/Graphics:
 - Still pictures, drawings, or photographs used to visually represent information.
 - Makes the content more attractive and easier to understand.
4. Video:
 - Moving images, typically with sound, used to show real-life scenes or animations.
 - Useful for storytelling, demonstrations, and simulations.
5. Animation:
 - The illusion of motion created by displaying a series of images or frames.
 - Often used in cartoons, educational videos, and presentations.

4. Differentiate between the do and while loop.

Answer :

	<i>Do-while loop</i>	<i>While loop</i>
1.	<i>In do while loop test condition is evaluated after the loop is executed.</i>	<i>In the while loop the test condition is evaluated before the loop is executed.</i>
2.	<i>It is an exit controlled loop</i>	<i>It is an entry controlled loop</i>
3.	<i>It has two keywords do and while.</i>	<i>It has a keyword while</i>
4.	<i>Loop is terminated with semicolon.</i>	<i>Loop is not terminated with semicolon.</i>

5. Suggest the prevention methods of cybercrime.

Answer : Here are 5 prevention methods of cybercrime, written in simple point-wise :

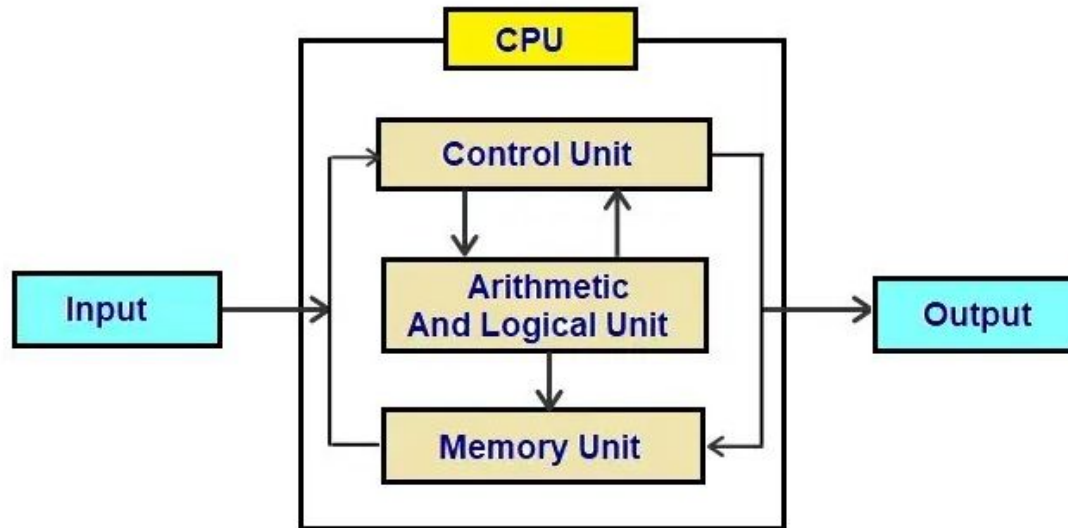
1. Use strong and unique passwords – Avoid easy or common passwords and change them regularly.
2. Install antivirus and firewall – Keep your device protected from malware and hackers.
3. Avoid clicking unknown links or attachments – These may contain viruses or phishing traps.
4. Keep software and apps updated – Updates fix security weaknesses that hackers can exploit.
5. Do not share personal information online – Be careful on social media and unknown websites.

Group 'C'

Give long answer to the following question (2 x 8=16)

6. Explain computer architecture with block diagram and functions of its components.

Answer : Computer Architecture : Computer architecture refers to the design and structure of a computer system. It explains how the different parts of a computer work together to process data and perform tasks. The main components of computer architecture are the Input Unit, Central Processing Unit (CPU), Memory Unit, and Output Unit.



Block Diagram of a Computer

Functions of Components

1. **Input Unit** : It is used to enter data and instructions into the computer. It converts human-readable data into a form the computer can process.
2. **Central Processing Unit (CPU)**:
It is the brain of the computer that controls all activities. It includes:
 - **Control Unit (CU)**: Directs all operations in the system.
 - **Arithmetic Logic Unit (ALU)**: Performs arithmetic and logical operations.
3. **Memory Unit** : Stores data and instructions temporarily or permanently. It includes primary memory (RAM, ROM) and secondary storage.
4. **Output Unit** : Converts processed data from the computer into human-readable form and displays the result using devices like monitor or printer.

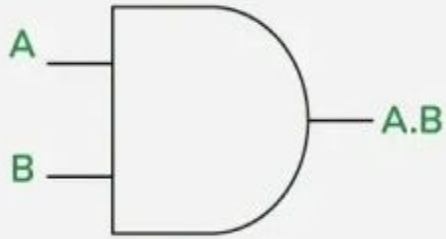
OR

Write a program to input the elements of 4 x 3 matrix and prints its elements properly using array.

7. Draw AND, OR, XOR and XNOR gates with truth table and logic gates.

Answer :

AND $A \cdot B = X$



Truth Table

A (Input 1)	B (Input 2)	$X = (A \cdot B)$
0	0	0
0	1	0
1	0	0
1	1	1

OR

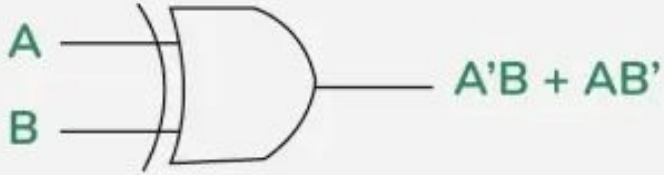
$X = A + B$



Truth Table

Input A	Input B	Output
0	0	0
0	1	1
1	0	1
1	1	1

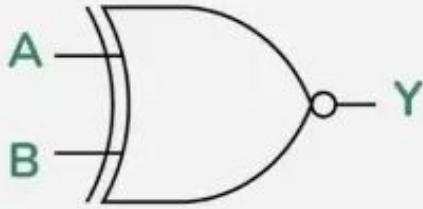
NOR $X = A'B + AB'$



Truth Table

A (Input 1)	B (Input 2)	$X = A'B + AB'$
0	0	0
0	1	1
1	0	1
1	1	0

XNOR $Y = (A \oplus B)'$



Truth Table

Input A	Input B	Output
0	0	1
0	1	0
1	0	0
1	1	1