



# NADAR HR.SEC.SCHOOL, RAJAPALAYAM.

## XI - COMPUTER SCIENCE - ENGLISH MEDIUM

### FIRST MID ANSWER KEY 2024



1.	Warm booting	6.	F2								
2.	64	7.	Finger Print Scanner								
3.	Universal	8.	0 to 7								
4.	VGA	9.	Pentium III								
5.	System Software	10.	0.5								
11.	<b>What is a computer?</b> It is an electronic device that processes the input according to the set of instructions provided to it and gives the desired output at a very fast rate.	12.	$(34)_{10} \rightarrow (100010)_2$								
13.	<b>Write the associative laws?</b> $A + (B + C) = (A + B) + C$ $A \cdot (B \cdot C) = (A \cdot B) \cdot C$	14.	<b>What is an instruction?</b> A command which is given to a computer to perform an operation on data is called an instruction.								
15.	<b>What is a GUI?</b> The GUI is a window-based system with a pointing device to direct I/O, choose from menus, make selections and a keyboard to enter text. Its vibrant colours attract the user very easily.	16.	<b>Differentiate copy and move.</b> <table border="1" style="width: 100%;"> <thead> <tr> <th>Move</th> <th>Copy</th> </tr> </thead> <tbody> <tr> <td>Moving a file or folder from source to a new location is called cutting.</td> <td>Copying is the process of moving a copy of a file or folder to a new location.</td> </tr> <tr> <td>Deletes the source files.</td> <td>Source files will not be deleted.</td> </tr> <tr> <td><b>Commands:</b> Edit → Cut (or) Ctrl + X Edit → Paste (or) Ctrl + V</td> <td><b>Commands:</b> Edit → Copy (or) Ctrl + C Edit → Paste (or) Ctrl + V</td> </tr> </tbody> </table>	Move	Copy	Moving a file or folder from source to a new location is called cutting.	Copying is the process of moving a copy of a file or folder to a new location.	Deletes the source files.	Source files will not be deleted.	<b>Commands:</b> Edit → Cut (or) Ctrl + X Edit → Paste (or) Ctrl + V	<b>Commands:</b> Edit → Copy (or) Ctrl + C Edit → Paste (or) Ctrl + V
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17.	Logic gates are the foundational elements of digital circuits. They process binary input 0s and 1s to produce specific outputs based on predetermined rules	18.	<b>Write the applications of computer.</b> Computers are seen everywhere around us, in all spheres of life, in the field of education, research, travel and tourism, weather forecasting, social networking, e-commerce, booking airlines, railway or movie tickets and even playing games.								
19.	<b>What is Booting?</b> When a computer is switched on, the pre-written program called POST (Power on Self Test) will be executed first. This program checks if the devices like RAM, keyboard, etc., are connected properly and ready to operate. If these devices are ready, then the BIOS (Basic Input Output System) gets executed. This process is called Booting. Booting process is of two types. 1) Cold Booting 2) Warm Booting	20.	<b>2.7.2 American Standard Code for Information Interchange (ASCII)</b> This is the most popular encoding system recognized by United States. Most of the computers use this system. Remember this encoding system can handle English characters only. This can handle $2^7$ bit which means 128 characters.								
21.	<b>Differentiate PROM and EPROM.</b> <table border="1" style="width: 100%;"> <thead> <tr> <th>PROM</th> <th>EPROM</th> </tr> </thead> <tbody> <tr> <td>Data can be written only once and cannot be erased.</td> <td>The ultraviolet light clears its contents, making it possible to reprogram the memory.</td> </tr> </tbody> </table>	PROM	EPROM	Data can be written only once and cannot be erased.	The ultraviolet light clears its contents, making it possible to reprogram the memory.	22.	<b>List out the key features of Operating system.</b> <ul style="list-style-type: none"> <li>❖ User Interface (UI)</li> <li>❖ Memory Management</li> <li>❖ Process management</li> <li>❖ File Management</li> <li>❖ Fault Tolerance</li> <li>❖ Security Management</li> </ul>				
PROM	EPROM										
Data can be written only once and cannot be erased.	The ultraviolet light clears its contents, making it possible to reprogram the memory.										
23.	<b>What are the functions of Windows Operating system?</b> <ul style="list-style-type: none"> <li>❖ Access applications on the computer (word processing, games, spread sheets, calculators and so on).</li> <li>❖ Load any new program on the computer.</li> <li>❖ Manage hardware such as printers, scanners, mouse, digital cameras etc.,</li> <li>❖ File management activities (For example creating, modifying, saving, deleting files and folders).</li> <li>❖ Change computer settings such as colour scheme, screen savers of your monitor, etc.</li> </ul>	24.	<b>What is the format of the specification of an algorithm?</b> The goal of the algorithm is to establish the relation between the input and the desired output. <ol style="list-style-type: none"> <li>1. algorithm_name (inputs)</li> <li>2. --inputs : Input Properties</li> <li>3. --outputs: Output properties</li> </ol>								
25.	<p> <math>14 \Rightarrow 00001110</math>  <math>12 \Rightarrow 00001100</math>  <math>10 \Rightarrow 00001010</math>  <math>(10)_2</math> </p> <p> <math>12 \Rightarrow 00001100</math>  <math>12 \Rightarrow 11110011</math>  <math>2^3 \Rightarrow 11110100</math>  <math>-12 \Rightarrow 11110100</math>  <math>5 \Rightarrow 00000101</math>  <math>11111001</math>  <math>(11111001)_2</math> </p>	26.	<b>Write the procedure to create shortcut in Windows OS.</b> <ul style="list-style-type: none"> <li>➤ Select the file or folder that you wish to have as a shortcut on the Desktop.</li> <li>➤ Right click on the file or folder.</li> <li>➤ Select Send to from the shortcut menu, then select Desktop (create shortcut) from the sub-menu.</li> <li>➤ A shortcut for the file or folder will now appear on your desktop and you can open it from the desktop in the same way as any other icon.</li> </ul>								

25.

Discuss the various generations of computers.

## 1) First Generation (1940 – 1956) – Vacuum tubes

- ❖ Big in size
- ❖ Consumed more power
- ❖ Malfunction due to overheat
- ❖ Machine Language was used

Example: ENIAC, EDVAC, UNIVAC 1

## 2) Second Generation (1956 – 1964) – Transistors

- ❖ Smaller compared to First Generation
- ❖ Generated Less Heat
- ❖ Consumed less power compared to first generation
- ❖ Punched cards were used
- ❖ Machine language as well as Assembly language was used.

Example: IBM 1401, IBM 1620, UNIVAC 1108

## 3) Third Generation (1964 – 1971) – Integrated Circuits

- ❖ Computers were smaller, faster and more reliable
- ❖ Consumed less power
- ❖ High Level Languages were used

Example: IBM 360 series, Honeywell 6000 series

## 4) Fourth Generation (1971 – 1980) – Microprocessor

- ❖ Smaller and Faster
- ❖ Microcomputer series such as IBM and APPLE were developed
- ❖ Portable Computers were introduced.

## 5) Fifth Generation (1980 – till date) – Ultra Large-Scale Integration

- ❖ Computers size was drastically reduced.
- ❖ Parallel Processing
- ❖ Can recognise Images and Graphics
- ❖ Introduction of Artificial Intelligence and Expert Systems
- ❖ Able to solve high complex problems including decision making and logical reasoning

## 6) Sixth Generation – In future – Artificial Intelligence

- ❖ Parallel and Distributed computing
- ❖ Computers have become smarter, faster and smaller
- ❖ Development of robotics
- ❖ Natural Language Processing
- ❖ Development of Voice Recognition Software

27.

Explain the characteristics of a microprocessor.

A Microprocessor's performance depends on the clock speed, instruction set and word size.

## ❖ Clock speed:

- Every microprocessor has an internal clock that regulates the speed at which it executes instructions.
- The speed at which the microprocessor executes instructions is called the clock speed.
- Clock speed is measured in MHz (Mega Hertz) or in GHz (Giga Hertz).

## ❖ Instruction Set:

- A command which is given to a computer to perform an operation on data is called an instruction.
- Basic set of machine level instructions that a microprocessor is designed to execute is called as an instruction set.
- This instruction set carries out the following types of operations:
  - ◆ Data transfer
  - ◆ Arithmetic operations
  - ◆ Logical operations
  - ◆ Control flow
  - ◆ Input/output

## ❖ Word Size:

- The number of bits that can be processed by a processor in a single instruction is called its word size.
- Word size determines the amount of RAM that can be accessed by a microprocessor.


26.

Explain the Derived gates with expression and truth table.

NAND, NOR, XOR, XNOR are derived gates.


## ❖ NAND:

- ✓ The NAND is the combination of NOT and AND.
- ✓ It acts in the manner of the logical operation "AND" followed by inversion.
- ✓ The output of the NAND gate is 0 if and only if both the inputs are 1, otherwise the output is 1.

Gate	Equation	Symbol	Truth table		
			A	B	$\overline{A \cdot B}$
NAND	$\overline{A \cdot B}$		0	0	1
			0	1	1
			1	0	1
			1	1	0


## ❖ NOR:

- ✓ The NOR is the combination of NOT and OR.
- ✓ The NOR gate circuit is an OR gate followed by an inverter.
- ✓ Its output is "true (1)" if both inputs are "false (0)" Otherwise, the output is "false(0)".

Gate	Equation	Symbol	Truth table		
			A	B	$\overline{A + B}$
NAND	$\overline{A + B}$		0	0	1
			0	1	1
			1	0	1
			1	1	0


## ❖ XOR:

- ✓ The XOR (exclusive - OR) gate acts in the same way as the logical "either/or."
- ✓ If both inputs are different, the output is 1.
- ✓ If both inputs are same, the output is 0.

Gate	Equation	Symbol	Truth table		
			A	B	$A \oplus B$
NAND	$A \oplus B$		0	0	0
			0	1	1
			1	0	1
			1	1	0

## ❖ XNOR:

- ✓ The XNOR (exclusive - NOR) gate is a combination XOR gate followed by an inverter.
- ✓ Its output is "true (1)" if the inputs are the same, and "false (0)" if the inputs are different.

Gate	Equation	Symbol	Truth table		
			A	B	$\overline{A \oplus B}$
NAND	$\overline{A \oplus B}$ (OR) $A \odot B$		0	0	1
			0	1	0
			1	0	0
			1	1	1

27

Explain the process management algorithms in Operating System.

## 1. FIFO (First In First Out) Scheduling:

- ❖ This algorithm is based on queuing technique.
- ❖ Technically, the process that enters the queue first is executed first by the CPU, followed by the next and so on. The processes are executed in the order of the queue (row).

## 2. SJF (Shortest Job First) Scheduling:

- ❖ This algorithm works based on the size of the job being executed by the CPU.
- ❖ Consider two jobs A and B.
  - 1) A = 6 kilo bytes
  - 2) B = 9 kilo bytes
 First the job "A" will be assigned and then job "B" gets its turn.

## 3. Round Robin Scheduling:

- ❖ It is designed especially for time sharing systems.
- ❖ Jobs (processes) are assigned and processor time in a circular method. For example, take three jobs A, B, C. First the job A is assigned to CPU then job B and job C and then again A, B and C and so on.

## 4. Based On Priority:

- ❖ The given job (process) is assigned based on a Priority.
- ❖ The job which has higher priority is more important than other jobs.
- ❖ Take two jobs A and B. Let the priority of A be 5 and priority B be 7. Job B is assigned to the processor before job A.

