NUNYA ACADEMY VACATION CLASS (SHS ONE END OF SESSION EXAMS SOLUTION GUIDE (I.C.T)

Section A: Objective Questions

1. **Which of the following is an example of system software?**

   ☞ ***Answer: B) Linux***

   Explanation: System software controls and manages hardware and provides a platform for application software. Linux is an operating system, which is system software.

2. **The physical parts of a computer that can be touched are known as:**

   ☞ ***Answer: C) Hardware***

   Explanation: Hardware includes tangible parts like the keyboard, monitor, and CPU.

3. **Which of the following is NOT an application of IoT?**

   ☞ ***Answer: C) Word Processing***

   Explanation: IoT applies to smart homes, healthcare, and smart cities. Word processing is a traditional computer application, not IoT.

4. A printer belongs to which category of devices?

☞ ***Answer: B) Output device***

Explanation: A printer produces information on paper, making it an output device.

5. Which of the following software is used for creating other software?

☞ ***Answer: C) Programming software***

Explanation: Programming software (e.g., compilers, IDEs) helps developers create other programs.

6. The CPU is also known as:

☞ ***Answer: B) The brain of the computer***

Explanation: The CPU processes instructions and manages tasks, just like the brain in the human body.

7. Which type of memory is volatile and temporary?

☞ ***Answer: B) RAM***

Explanation: RAM loses its data when power is off, unlike ROM which is permanent.

8. Which IoT component is responsible for collecting raw data?

☞ ***Answer: C) Sensors/Devices***

Explanation: Sensors detect changes in the environment and collect data.

9. Antivirus software is an example of:

☞ ***Answer: C) Utility software***

Explanation: Utility software helps maintain and protect the computer system, including antivirus programs.

10. Which of these is an output device?

☞ ***Answer: C) Monitor***

Explanation: A monitor displays information from the computer to the user.

11. Middleware in software is often referred to as:

☞ ***Answer: B) The connective tissue***

Explanation: Middleware connects different software applications or systems.

12. Which of these is a challenge of IoT?

☞ ***Answer: B) Security risks***

Explanation: IoT devices face risks of hacking, privacy invasion, and data theft.

13. The motherboard in a computer:

☞ **Answer: C) Acts as the communication backbone**

Explanation: The motherboard connects all hardware components, enabling communication.

14. Which of these is an example of educational software?

☞ ***Answer: A) Duolingo***

Explanation: Duolingo is designed to teach languages, making it educational software.

15. A graphics card driver belongs to which category?

☞ ***Answer: B) Driver software***

Explanation: Driver software allows hardware (like a graphics card) to work with the operating system.

16. Which IoT characteristic allows you to control a device from another location?

☞ ***Answer: C) Remote accessibility***

Explanation: IoT devices can be accessed and controlled from anywhere via the internet.

17. Which device converts hard copy documents into digital form?

☞ ***Answer: B) Scanner***

Explanation: A scanner digitizes physical documents into electronic files.

18. SSD stands for:

☞ ***Answer: B) Solid State Drive***

Explanation: SSD is a fast, durable storage device with no moving parts.

19. In IoT, which technology is used for device connectivity?

☞ ***Answer: B) Wi-Fi***

Explanation: Wi-Fi enables IoT devices to connect and communicate over the internet.

20. The Power Supply Unit (PSU) in a computer:

☞ ***Answer: B) Converts electricity into usable power***

Explanation: The PSU supplies power by converting electricity into forms suitable for computer components.

✅ Section B: Subjective Questions

Question 1. Differences between system software, application software, and utility software (15 marks)

System software:
Controls and manages hardware.
Example: Windows, Linux, MacOS.
Without system software, a computer cannot function.

Application software:
Programs designed to perform user tasks.
Example: MS Word (word processing), Photoshop (image editing), Zoom (communication).

Utility software:
Helps in maintaining and optimizing the system.
Example: Antivirus (protection), Disk Cleanup (storage management).

📌 ***Analogy:*** If a computer were a car:
System software = engine control system
Application software = GPS or music player
Utility software = car maintenance tools

Question 2. Three components of computer hardware and their roles (10 marks)

Input Devices (e.g., keyboard, mouse) – Allow users to enter data into the computer.

Output Devices (e.g., monitor, printer) – Display or produce results from the computer.

Storage Devices (e.g., HDD, SSD) – Store data permanently or temporarily.

Question 3. Compare RAM and ROM (10 marks)

RAM (Random Access Memory):

- Volatile (loses data when power is off).
- Stores temporary data for active processes.
- Example: Running programs, multitasking.

ROM (Read Only Memory):

- Non-volatile (data remains even when power is off).
- Stores permanent instructions like BIOS.
- Example: Booting process of a computer.

📌 ***Analogy:*** RAM = whiteboard (temporary notes), ROM = printed book (permanent instructions).

Question 4. Advantages of middleware + real-world example (15 marks)

Advantages:

- Enables communication between different applications.
- Improves efficiency by reducing complexity.
- Supports scalability in businesses.
- Ensures smooth data exchange across platforms.

Real-world example:
In banking systems, middleware connects ATMs, mobile apps, and core banking software, allowing real-time transactions and customer service.

Question 5. Relationship between hardware and software (10 marks)

Hardware = physical components (CPU, monitor, keyboard).
Software = programs that give instructions (OS, apps).

Both are interdependent:
Hardware without software = useless (like a phone without apps).
Software without hardware = cannot run (like music without a player).

📌 ***Example:***
When you type in MS Word (software) using a keyboard (hardware), the CPU processes it, and the monitor (hardware) displays the text.