DAR-ES-SALAAM INSTITUTE OF TECHNOLOGY (DIT)

MODULE NUMBER: COT04113

MODULE: COMPUTER WORKSHOP TECHNOLOGY

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QUESTION 1.

Why must there be safety rules and precautions in the computer laboratory? List at least three reasons

ANS:

i. To prevent any unnecessary accidents and injuries that might occur in the laboratory during any sort of activity; In a computer laboratory there several electrical equipment such as cables, wires and sockets, so if laboratory safety precautions aren't places minor or sometimes major accident might occur such electric shock as well as someone might trip and fall.

ii. To protect and to prolong the lifespan of computer equipment's; computer equipment and hardware are very delicate and expensive at the same time so necessary precautions are taken and should be executed to avoid any sort of damage. For instance, preventing ever entering the computer laboratory with foods and drinks that may likely spill on the equipment's and cause them to short circuit.

iii. Maintaining an effective and organized environment; enable individuals be able to concentrate better in their tasks as well as promoting good- and well-mannered behavior such as being able to share the available materials among one other during the course of time the task should be completed.

QUESTION 2.

a. **Describe (step-by-step) procedures on how to assemble computer parts.**

ANS.

Step One: Preparation phase

- Pick a clean and well-lit-surfaced table and may begin to unpack all the materials that are going to be used onto the table and reading and going through all the instructions, ground yourself using an anti-static mat or anti- static hand strip to discharge any excess static charges that may have been generated from your body.

Step Two: Assembly phase

- It is considered that it safe to firstly mount the motherboard components before even placing the motherboard into the case so we may begin with firstly placing the Central Processing Unit (CPU) unto the motherboard secondly installation of the CPU cooler (heat sink) that is regularly attached on top of the CPU itself thirdly installing the Random Access Memory (RAM) onto its respective RAM slots that is available on the motherboard and lastly installing of the secondary storage drives they can either be Solid State Drives (SSD) or Hard Disk Drive (HDD) and finally we can mount the motherboard to the computer case.

- In this step we need the computer case open, and we may begin by firstly installing the power supply unit to the computer case into its respective compartment and screwing it properly and firmly to the computer case to prevent it from coming due to

unnecessary shaking. Secondly, we may now connect the power supply to the motherboard in the appropriate interfaces.

Step 3: Final step and testing

- Connect all the necessary data cables via motherboard to facilitate data transfers.
- Close the computer case and ensure that all connections are safe and secure as well as no materials such as screwdrivers that were used during the installation process are left inside the computer case.
- And last but not least, we may connect in the peripherals such as keyboards, mouse and the monitor.
- Boot the System and Install OS**:** Power on the computer. It should boot to the BIOS/UEFI. Once you verify all components are recognized, you can proceed with installing your operating system from a bootable USB drive.
- Lastly, we may now power on the computer to see if the system will run.

b. Which tools will be used when you need to accomplish assembling computer parts?

Ans:

The essential tools for assembling computer parts include:

- P**hillips Head Screwdriver:** The most commonly used tool for securing components, cases, and drives. Often, a set with different sizes is recommended.
- **Anti-static Wrist Strap:** Crucial for preventing electrostatic discharge (ESD), which can permanently damage sensitive

electronic components. It grounds the user, neutralizing static buildup.

- **Zip Ties or Velcro Straps:** For organizing and managing internal cables, improving airflow, and making the build look cleaner.
- **Flashlight or Headlamp:** Provides better visibility inside the computer case, especially in dimly lit areas.
- **Needle-nose Pliers or Tweezers:** Can be useful for manipulating small cables, jumpers, or picking up dropped screws in tight spaces.
- **Thermal Paste:** If your CPU cooler doesn't come with pre-applied thermal paste, you'll need a tube to apply a thin layer between the CPU and the cooler.

QUESTION 03.

List down important equipment found in the computer workshop/laboratory.

Ans:

Important equipment typically found in a computer or laboratory includes:

i. **Workstations/Desktop Computers:** The primary devices for user interaction and tasks.

ii. **Monitors, Keyboards, and Mice:** Essential peripherals for operating the computers.

iii. **Printers/Scanners:** For outputting and inputting physical documents.

iv. **Networking Equipment:** Routers, switches, modems, and patch panels for establishing and managing network connectivity.

v. **Servers:** Often found in labs for hosting services, applications, or for network management.

vi. **Uninterruptible Power Supplies (UPS):** To provide backup power and surge protection for critical equipment.

vii. **Diagnostic Tools:** Multimeters (for electrical measurements), cable testers (for network cables), loop-back adapters, and POST cards.

viii. **Soldering Station (for electronics-focused labs):** For repairing or building circuit boards.

ix. **Anti-static Mats and Wrist Straps:** For safe handling of sensitive electronic components.

x. **Toolkits:** Containing screwdrivers, pliers, wire cutters, and other hand tools for assembly and repair.

xi. **Software:** Operating system installation media, diagnostic software, benchmarking tools, and various application software.

xii. **Storage Devices:** External hard drives, USB drives, and possibly NAS/SAN devices for data backup and sharing.

xiii. **Fire Extinguishers:** Safety equipment for immediate response to electrical fires.

xiv. **Cleaning Supplies:** Compressed air, lint-free clothes, screen cleaner for maintaining equipment.