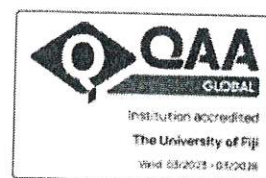




The University of Fiji
(An Entity of Arya Pratinidhi Sabha of Fiji)



SCHOOL OF SCIENCE AND TECHNOLOGY
Semester 2, 2024



FINAL EXAMINATION PAPER

ITC263: SECURITY AND SUPPORT IN IT

Important Instructions to Students:

1. Read the questions, instructions carefully and answer the questions.
2. You are allowed an **extra 10 minutes reading time** (during this time, you are not allowed to write with pen) and **180 minutes (3 Hours) to complete this paper**.
3. Silent, non-programmable calculators are allowed, but not supplied.
4. Write all your answers in the answer booklet provided. If you need extra sheets, please ask from the supervisor. Write your name, course code and student identification number in the answer booklet and in the attendance sheet.
5. This paper contains two (2) sections – Section A and Section B. All questions are compulsory to answer **except** for choices in Section B. In Section B, answer ANY twenty (20) questions out of the given twenty-two (22).
6. Write all your answers legibly. The marker has the right to award zero for answers that are not legible.
7. This is a **Closed Book Examination**. The University views plagiarism, cheating and dishonest practice as serious offences and if found, offenders are penalized.

Examination Paper Content (Format):

<u>Section</u>	<u>Question</u>	<u>Content</u>	<u>Marks</u>	<u>Suggested Time</u>
A	1-20	Multiple Choice Questions	20	30 minutes
B	1-22	Discussion Questions	80	150 minutes
		TOTAL	100	180 Minutes

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Registration Certificate Number (RGN0020/11)*

SECTION A – MULTIPLE CHOICE QUESTION

[20 MARKS]

Each question is worth 1 mark.

Answer all questions.

For each question, write the letter representing the best answer in the Answer Booklet.

1. A four-year-old laptop will not boot and presents error messages on-screen. You have verified with the laptop technical support that these error messages indicate the wireless card has failed and needs replacing. What is the first step you should take to prepare for the repair?
 - A. Ask yourself if replacing the wireless card will cost more than purchasing a new laptop.
 - B. Find a replacement wireless card.
 - C. Find the service manual to show you how to replace the wireless card.
 - D. Ask if the laptop is still under warranty.

2. A customer asks you over the phone how much it will cost to upgrade memory on their desktop system to 16 GB. The customer is a capable Windows user and able to access BIOS/UEFI setup using the user power-on password you set up for them. Which actions can you ask the customer to perform as you direct them over the phone to get the information you need to develop an estimate of the upgrade's cost?
 - A. Use BIOS/UEFI to view how much memory is installed and how much memory the system can hold.
 - B. Enter info32.exe to determine how much memory is currently installed.
 - C. Use BIOS/UEFI to show which memory slots are used and how much memory is installed in each slot.
 - D. View the System Information window to determine how much memory is currently installed.

3. An experienced user has installed Oracle VM VirtualBox on their workstation and is attempting to use it to create a virtual machine (VM). The software is causing error messages while attempting to create the VM. What is the most likely problem?
 - A. The user does not know how to use the software.
 - B. Virtualization is not enabled in BIOS/UEFI.
 - C. The version of Windows they are using is not rated for installations of Oracle software.
 - D. The processor is not rated to support VirtualBox and VMs.

4. You upgrade a faulty PCIe video card to a recently released higher-performing card. Now the user complains that Windows hangs a lot and gives errors. Which is the most likely source of the problem? Which is the least likely source?
 - A. A component of the computer is overheating.
 - B. Windows does not support the new card.
 - C. The drivers for the card need updating.
 - D. Memory is faulty.

5. You discover Event Viewer has been reporting hard drive errors for about a month. What is the first solution you should try to fix the problem?
 - A. Use the chkdsk command to repair the drive.
 - B. Use Explorer to reformat the drive.
 - C. Replace the drive with a known good one.
 - D. Download and install firmware updates to the drive from the hard drive manufacturer.
6. Your desktop computer has DVI and HDMI video ports. If a DVI monitor does not work on your system but you know the monitor is good, what is the best solution?
 - A. Use a DVI to HDMI adapter to use the current DVI monitor and cable.
 - B. Buy a new HDMI monitor to use with the HDMI port.
 - C. Install a video card in your computer with a DVI port.
 - D. Replace the motherboard with another motherboard that has a DVI port.
7. A computer on a LAN is not able to connect to the Internet even though other computers on the LAN are able to connect. You use the ipconfig command to discover the IP address of the computer is 169.254.18.45. What can you conclude from this information?
 - A. The ISP connection is down, and you need to reboot the router.
 - B. The computer did not connect to the router to receive a dynamic IP address.
 - C. The computer's NIC is not functioning correctly, or a port on the router is bad.
 - D. The router's DHCP server is not configured correctly.
8. Which component in a thin client might need a higher rating than other components?
 - A. The CPU, because most of the processing is done on the thin client
 - B. RAM, because the system must have enough to hold a virtual desktop
 - C. The hard drive, because a VM takes up a large amount of hard drive space
 - D. The NIC, because most of the processing is done on the server
9. In an enterprise, when an employee is allowed to use their smartphone for business, which software is used to verify the smartphone satisfies the security requirements needs to protect enterprise data on the device?
 - A. Microsoft Exchange
 - B. VPN
 - C. MDM
 - D. ActiveSync
10. Which *Chromebook* security feature ensures that malware can't change the OS's system files?
 - A. Quick updates
 - B. Power washing
 - C. Sandboxing
 - D. Verified boot

11. You're responding to a troubleshooting ticket about a laser printer in HR that isn't working. According to the ticket, the printer runs the print job and successfully sends the paper through with the text printed correctly. However, the toner smudges easily and sticks to other papers, equipment, and clothes. Which part in the printer probably needs replacing?
- A. Fuser assembly
 - B. Imaging drum
 - C. Transfer roller
 - D. Toner cartridge
12. Asha wants her 32-bit installation of Windows 10 Home to run faster. She has 4 GB of memory installed on the motherboard. She decides more memory will help. She installs an additional 2 GB of memory for a total of 6 GB but does not see any performance improvement. What is the problem, and what should you tell Asha?
- A. She should use Control Panel to install the memory in Windows. After it is installed, performance should improve. Tell Asha how to open Control Panel.
 - B. A 32-bit OS cannot use more than 4 GB of memory. Tell Asha she has wasted her money.
 - C. A 32-bit OS cannot use more than 4 GB of memory. Tell Asha to upgrade her system to the 64-bit version of Windows 10 Home.
 - D. A 32-bit OS cannot use more than 4 GB of memory. Explain the problem to Asha, and discuss the possible solutions with her.
13. You suspect malware might have infected restore points saved on the computer, and you want to delete them all. What is your next step?
- A. Turn off System Protection.
 - B. Run anti-malware software to scan the system for malware.
 - C. Harden the Windows Firewall, closing all open ports.
 - D. Update Windows.
14. When trying to improve performance of a slow system, you notice in Task Manager that the *truekit* service is using a high percentage of CPU time. What is your best next step?
- A. Disable *truekit* to improve performance.
 - B. Update Windows to improve *truekit* performance.
 - C. *truekit* is an essential Windows process and should not be disabled. Move on to other solutions to improve performance.
 - D. Ask the user if they use the *truekit* service. If they don't, uninstall it.
15. Your Windows system boots to a blue screen stop error and no desktop. What do you do first?
- A. Reinstall Windows.
 - B. Use the web to research the stop error messages and numbers.
 - C. Attempt to boot into Windows RE using the Windows setup DVD or a recovery drive.
 - D. Verify that the system is getting power.

16. What is the first thing you should do when you discover a computer is infected with malware?
- A. Turn off system protection.
 - B. Update installed anti-malware software.
 - C. Format the hard drive.
 - D. Quarantine the computer.
17. You open a folder Properties dialog box to encrypt the folder, click Advanced, and discover that *Encrypt contents to secure data* is dimmed. What is the most likely problem?
- A. Encryption has not been enabled. Use the Computer Management console to enable it.
 - B. You are not using an edition of Windows that supports encryption.
 - C. Most likely a virus has attacked the system and is disabling encryption.
 - D. Encryption applies only to files, not folders.
18. What is a potential security risk when enabling Developer mode in Android?
- A. Android updates can install without your knowledge.
 - B. Malicious software might reach your device when it is connected to a computer via a USB cable.
 - C. A video game might contain malware that can reach the Android root level of your mobile device.
 - D. Malicious software can easily download and install from the web without your knowledge.
19. Your manager asks you to transmit a small file that includes sensitive personnel data to a Linux server on the network. The server is running a Telnet server and an SSH server. Why is it not a good idea to use Telnet to reach the remote computer?
- A. Telnet transmissions are not encrypted.
 - B. Telnet is not reliable, and the file might arrive corrupted.
 - C. SSH is faster than Telnet.
 - D. SSH running on the same computer as Telnet causes Telnet not to work.
20. In Linux, when logged in as a normal user with root privileges, which command must precede the apt-get command in the command line in order to install a program?
- A. sudo
 - B. sudo user
 - C. su
 - D. root

SECTION B – DISCUSSION QUESTIONS

[80 MARKS]

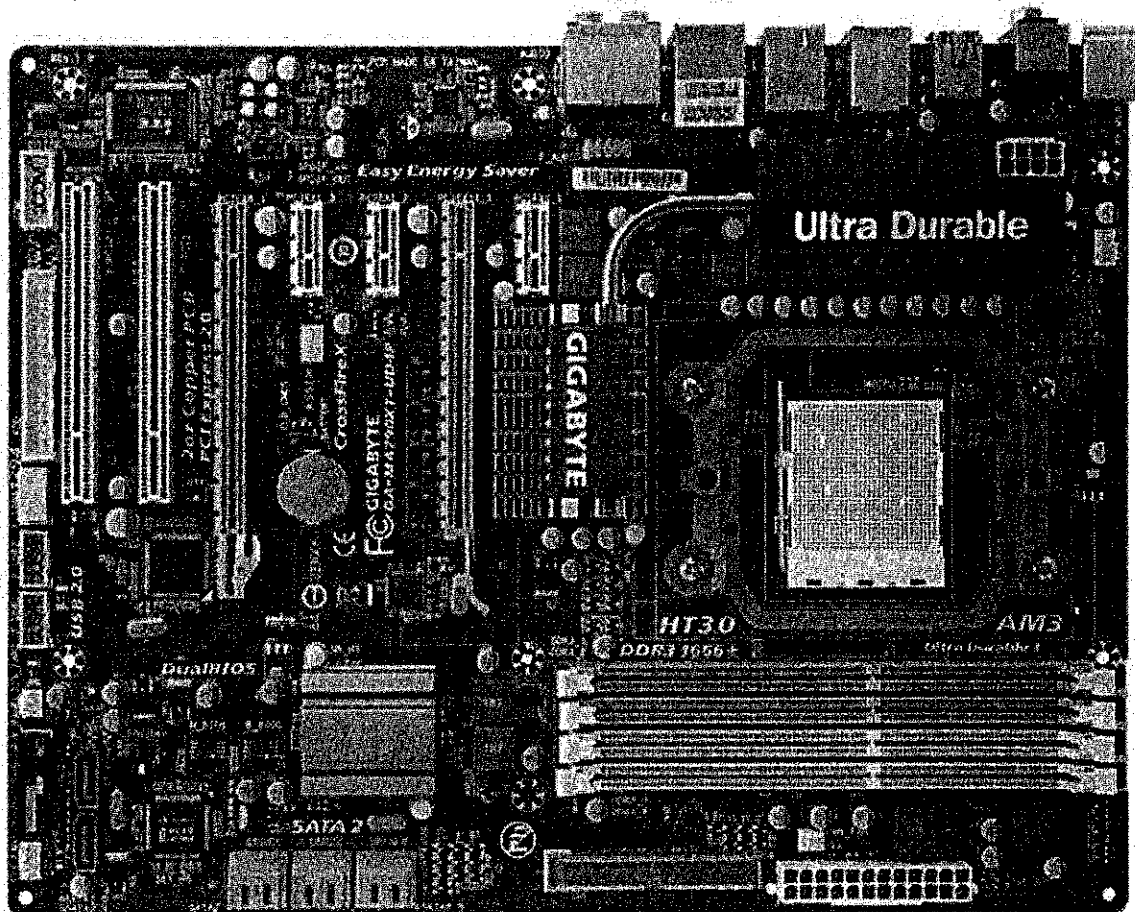
Each question is worth 4 marks.

Answer ANY 20 questions out of the following 22.

1. Write the name and brief description & function of the following laptop ports:



2. Study the motherboard given below and describe the CPU, RAM, HDD, PSU it supports.



3. When planning a memory upgrade, you discover that Windows reports 4GB memory installed. In BIOS/UEFI, you see that two of four slots are populated. You then install 2 GB DIMMs in two empty DIMM slots. When you boot the system, Windows still reports 4 GB of memory. Write steps 1 to 4 of what you should do to troubleshoot the problem of missing memory.
4. Explain with example, how you should calculate the wattage capacity needed by a PSU?
5. Describe the HDD interface standards that are in common use latest desktops and laptops today.

6. List and describe with examples, at least four (4) technologies and features of LCD monitors.
7. Describe each of the following four (4) layers and their Addressing in the TCP/IP model for network communications – Application, Transport, Internet, Link.
8. Explain at least four (4) benefits of migrating to Cloud SaaS.
9. Explain at least four (4) common mobile device problems and how to troubleshoot such problems using OS tools.
10. Explain how to troubleshoot printer problems.
11. Suppose you are a customer who wants to have a computer repaired. Explain four main characteristics that you would want to see in your computer repair person besides his/her technical skills.
12. Explain how to evaluate a system to determine whether it qualifies for Windows 10 or Windows 11.
13. Explain how to maintain a hard drive for optimal performance using Windows OS.
14. Explain the following in relation to Windows OS – *shell, kernel, process, thread*.
15. Explain the boot process from the time you press the power button until the Windows desktop loads.
16. Explain what you will do to deal with malicious software on personal computers.
17. Explain with examples how you will secure a Windows personal computer using Windows tools on the local computer.
18. Explain with examples four (4) best practices for securing mobile and embedded devices.
19. Explain with examples four (4) best practices for securing a multifunctional router for a SOHO network.
20. Explain with examples four (4) best practices for securing a macOS system.
21. Explain with examples four (4) best practices for securing a Linux system.
22. Explain with examples four (4) security considerations in scripting.

The End

