THE UNIVERSITY OF ZAMBIA
School of Natural Sciences
Department of Computer Science

CSC 2101
COMPUTER SYSTEMS

DEFERRED EXAMINATION

Date: 16th FEBRUARY, 2022
Time: 09:00 – 12:00 HOURS
Duration: 3 Hours
Venue: SPORTS HALL

INSTRUCTIONS

1. This exam paper has **Seven (7)** questions.
2. Answer **ANY FIVE (5)** questions.
3. Clearly identify the problem being solved.
4. Use the marks as a guide to the detail required in your answers while keeping your answers concise and relevant.

QUESTION ONE

i. Power supplies can be single rail or multi rail.

    a. What is a rail in this context? [2 marks]

    b. Distinguish between a single rail and multi rail power supply. [4 marks]

ii. Adapter Cards are an important component in computers.

    a. Explain the function of adapter cards. [2 marks]

    b. Name and state the function of any two (2) adapter cards. [4 marks]

iii. A number of different types of devices are available for data storage on a PC.

    a. Name the four (4) types of data storage device used on a PC and state the media it uses. [8 marks]

QUESTION TWO

i. Most computers today run UEFI.

    a. What does UEFI stand for? [2 marks]

    b. Explain how the UEFI Secure Boot standard works. [4 marks]

ii. RISC and CISC are two distinct types of instruction sets that CPUs may use.

    a. What do the acronyms RISC and CISC stand for? [4 marks]

    b. Explain how each instruction works. [6 marks]

iii. Distinguish between CPU overclocking and CPU throttling. [4 marks]

QUESTION THREE

i. For each of the following computer problems below, identify three (3) probable causes and the corresponding possible solutions for each probable cause. **[9 marks]**

    a. The computer does not recognize a storage device.

    b. The computer will not eject an optical disc.

    c. The computer does not recognize a removable external drive.

ii. The internet is an excellent source of information about specific hardware problems and possible solutions.

    a. Mention six (6) reference tools or sources of such information on the internet. **[6 marks]**

    b. Distinguish between the use of Notes and Journals in the troubleshooting process. **[5 marks]**

QUESTION FOUR

i. A variety of networking icons are used to represent different parts of a computer network. Draw the icon and state the function of each of the following devices. **[10 marks]**

   a. Switch

   b. Router

   c. Wireless router

   d. Access point (AP)

   e. Modem

ii. Consider the table below

   a. For each characteristic, choose whether it belongs to TCP or UDP. **[9 marks]**

   b. What do the acronyms TCP and UDP stand for? [1 mark]

Characteristic	TCP	UDP
Does not require acknowledgements		
Delivers data as it arrives		
Reliable		
Fast		
Resends lost data		
Delivers data in sequenced order		
Low overhead		
Does not resend lost data		
Acknowledges data		

QUESTION FIVE

i. Describe three (3) problems with the traditional server deployment approach. **[6 marks]**

ii. Explain how each of the following cloud services operates. **[6 marks]**

   a. Software as a Service (SaaS)

   b. Platform as a Service (PaaS)

   c. Infrastructure as a Service (IaaS)

iii. Describe each of the following malware **[8 marks]**

   a. Adware

   b. Ransomware

   c. Rootkit

   d. Spyware

QUESTION SIX

i. Consider the table below

   a. For each Mobile Platform feature, choose whether it belongs to Android or iOS. **[6 marks]**

Mobile Platform Features	Android	iOS
Linux based operating system		
Closed source operating system		
Developed by Open Handset Alliance		
Source code is not released to the public		
Uses walled garden model for apps		
Third-party or custom programs are installed directly using an .apk file.		

ii. Discuss in detail Rooting and Jailbreaking as two methods for removing restrictions and protections added to mobile operating systems. [**10 marks**]

iii. State the function performed by each of the following CLI Commands. [**4 marks**]

   a. ls

   b. mv

   c. rm

   d. pwd

QUESTION SEVEN

For each of the following types of customer, write four (4) tips for helping the customer.

   i. Talkative customer [4 marks]

   ii. Rude customer [4 marks]

   iii. Knowledgeable Customer [4 marks]

   iv. Angry Customer [4 marks]

   v. Inexperienced customer [4 marks]

The End