SCOTT CHRISTIAN UNIVERSITY EXAMINATIONS 28 JUL 2025 SIGN:..... P. O. BOX 49 - 90100, MACHAKOS.

Scott Christian UNIVERSITY

A Dynamic Centre of Academic Excellence

SCHOOL OF EDUCATON AND BUSINESS STUDIES

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

UNIT CODE/NAME: DCT 022: INTRODUCTION TO COMPUTERS AND OPERATING SYSTEMS

May- Aug 2024/2025 End Semester Exam - Time: 2 Hours

Instructions: Answer Question ONE (Compulsory) and any other TWO questions.

QUESTION ONE

a) Define the following Terms: **(3 Marks)**
   i. Kernel
   ii. Data processing
   iii. Shell

b) Explain the importance of an operating system in a computer **(3 Marks)**

c) Explain why an operating is regarded as an interface in a computer system **(4 Marks)**

d) Computers may be classified according to functionality, size and purpose. According to functionality there are three subcategories. Discuss the three subcategories. **(3 Marks)**

e) Define the term operating system. **(2 Marks)**

f) Discuss the role of the following in a computer operating system: **(8 Marks)**
   i. Primary Memory
   ii. Process
   iii. Process Control Block
   iv. Paging

g) Scott Christian University ICT department is planning to purchase new computers to replace all aging computers in the institution. As an ICT student, outline the computer Procurement considerations to be used in order to help the concerned department. **(3 Marks)**

h) Outline the differences between **RAM** and **ROM** **(4 Marks)**

QUESTION TWO

a) Define the term auxiliary storage **(2 Marks)**

b) Differentiate between a system software and an application software **(4 Marks)**

c) Why is ROM preferred for installing all system files necessary for computer booting? **(2 Marks)**

d) Differentiate between proprietary software and open source software **(4 Marks)**

e) The following are functions of Operating systems. Describe what each of them entails
   i. Memory Management

ii. Interrupt Handling
iii. File management **(3 Marks)**

QUESTION THREE

a) Define the term deadlock **(1 Mark)**
   i. Discuss the various measures that can be used to prevent a deadlock. **(6 Marks)**
   ii. State two roles of an operating system in a Computer network **(4 Marks)**

b) An ordinary computer operating system which is characterized by Graphical User interface. Define the term Graphical User interface **(2 Marks)**

c) Differentiate between program and software **(2 Marks)**

QUESTION FOUR

a) Define the term process **(2 Marks)**
   i. Differentiate between a process and process scheduling **(4 Marks)**
   ii. Differentiate between a device and device driver

b) A computer is system like any other hence it has components. Discuss the components of a computer system **(6 Marks)**

c) An operating is regarded as a resource manager. Discuss the various resources an operating manages **(3 Marks)**

QUESTION FIVE

a) Using a diagram, demonstrate how an operating system facilitates the interaction between the Hardware, users and application programs. Write short notes. **(6 Marks)**

b) Discuss the importance of an operating system in file Management. Write short notes **(6 Marks)**

c) Explain the following terms with regard to data storage in a computer. **(3 Marks)**
   i. Bit
   ii. Byte
   iii. word

