



(Knowledge for Development)

KIBABII UNIVERSITY
(KIBU)
UNIVERSITY EXAMINATIONS
2019/2020 ACADEMIC YEAR
SPECIAL/SUPPLEMENTARY EXAMINATIONS
YEAR ONE SEMESTER TWO EXAMINATIONS

FOR THE DEGREE OF
BACHELORS OF SCIENCE
(INFORMATION TECHNOLOGY)

COURSE CODE: BIT 123

COURSE TITLE: PLATFORM TECHNOLOGIES I

DATE: 02/02/2021

TIME: 8.00-10.00

SPECIAL PAPER

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION THREE [20 MARKS]

- a. Memory management component is one of the operating systems components. Describe four responsibilities of this component [4 marks]
- b. State and explain four main types of file organizations implemented in operating systems [4 marks]
- c. What is meant by spatial locality of reference? [2 marks]
- d. Briefly explain the meaning of the term 'starvation'. [2 marks]
- e. Briefly explain the term 'memory hierarchy' as used in operating systems. Use a diagram to illustrate your answer [4 marks]
- f. Describe when Hierarchical Memory Organization is Justified [2 marks]
- g. distinguish between a page and a frame in the context of memory management [2 marks]

QUESTION FOUR [20 MARKS]

- a. With the aid of a diagram, differentiate between segmentation and paging [4 marks]
- b. Explain four attributes of a file. [4 marks]
- c. Describe direct memory access (DMA) [4 marks]
- d. Explain three objectives of I/O device management [6 marks]

QUESTION FIVE [20 MARKS]

- a. Interrupt disabling and enabling is a common approach to implementing mutual exclusion, what are its disadvantages? [2 marks]
- b. I/O Devices are divided into two categories. State and explain each of these categories. [2 marks]
- c. Distinguish between internal fragmentation and external fragmentation [4 marks]
- d. State and explain four types of scheduling as used in operating systems [4 marks]
- e. Explain the meaning of the following concepts in the context of operating systems. [2 marks]
 - i. Distributed operating systems [2 marks]
 - ii. Principle of locality [2 marks]
- f. When designing memory manager, the designers strive to achieve various goals. Describe each of these goals [4 marks]