



ZIMBABWE EZEKIEL GUTI UNIVERSITY

FACULTY OF SCIENCE, TECHNOLOGY, AGRICULTURE AND FOOD
SYSTEMS DEVELOPMENT

INFORMATION SYSTEMS DEPARTMENT

EXAMINATION PAPER

COURSE CODE : DIS123
COURSE TITLE : OPERATING SYSTEMS
DURATION : 3 Hours
LEVEL : 1.1
DATE : 2024

12 JUN 2024

INSTRUCTIONS TO CANDIDATES:

1. Answer any **FOUR** questions
2. Each question carries 25 Marks.

QUESTION 1

- a. Explain the states a process can be in. [5marks]
- b. Explain the following Operating Systems terms:
 - i. Turnaround time
 - ii. Throughput
 - iii. Response time [3 marks]
- c. With the aid of diagrams explain TWO memory management techniques [8 marks]
- d. Explain FIVE functions of the operating system. [5 marks]
- e. Distinguish:
 - i. Multiprocessing and multi programming [2 marks]
 - ii. Pre-emptive and non-pre-emptive scheduling algorithms [2 marks]

QUESTION 2

- a. Ann has visited a computer shop with the intention of purchasing an operating system. Advise her on the features to look out for in her choice [4 marks]
- b. Outline four objectives of input/output device management [4 marks]
- c. Describe the following process scheduling algorithms
 - i. FCFS [4 marks]
 - ii. Round robin [4 marks]
 - iii. Priority scheduling [4 marks]
- d. Explain THREE advantages and TWO disadvantages of Graphical User Interface
[5 marks]

QUESTION 3

- a. Explain FIVE components of a process control lock systems. [10]
- b. Explain FOUR conditions that must be present for deadlock to occur. [8 marks]
- c. Explain FOUR advantages of command line interface. [4]

- d. List down THREE activities a user can perform on a file. [3 marks]

QUESTION 4

- a. Explain FIVE types of operating systems [10 marks]
b. Briefly explain the THREE types of schedulers. [3 marks]
c. Explain FIVE qualities of a good scheduling algorithm [5 marks]
d. List FOUR examples of operating systems in the market today. [4 marks]
e. Explain THREE features of modern operating systems [3 marks]

QUESTION 5

- a. With the aid of diagrams explain paging and swapping memory management techniques. [8 marks]
b. With the aid of a diagram explain the FIVE state process model [8 marks]
c. Define the following terms:
i. Buffer
ii. External fragmentation
iii. Fixed partition
iv. Segmentation [4 marks]
d. With the aid of examples explain input/output categories [5 marks]

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