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GABA CAMPUS - ELDORET

MAIN EXAMINATION

SEPTEMBER – DECEMBER 2021 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER AND INFORMATION SCIENCE

DIPLOMA IN INFORMATION TECHNOLOGY

DIT 005: FUNDAMENTALS OF OPERATING SYSTEMS

Date: December 2021	**Duration:** 2 Hours
Instructions: Answer Question **ONE** and any other **TWO** Questions	

QUESTION ONE

i) What is an Operating System? **(2 marks)**

ii) State any two roles of operating system **(2 marks)**

iii) As a process executes, it changes state. Highlight the five states of a process. **(5 marks)**

iv) What are the four circumstances that would make CPU schedule scheduling take place? **(4 marks)**

v) What are the two primary objectives of having an operating system in a computer system? Explain how an operating system helps in meeting this objectives **(6 marks)**

vi) List three examples of deadlock which are not related to a computer system environment. **(3 marks)**

vii) Briefly explain the booting process. **(8 marks)**

QUESTION TWO

i) What is deadlock? **(2 marks)**

ii) Write short notes on Round Robin Scheduling Algorithm. **(6 marks)**

iii) Describe FCFS scheduling algorithm with a suitable example. **(6 marks)**

iv) Differentiate between the following terms as used in operating systems

i) External fragmentation **(3 marks)**

ii) Internal fragmentation **(3 marks)**

QUESTION THREE

i) Memory management schemes are broadly divided into two. Explain **(6 marks)**

ii) In which way is the operating system responsible for processor/process management **(6 marks)**

iii) An operating system provides and environment and certain services to program and users. Explain any three services offered by the operating system **(6 marks)**

iv) Define the term Process. **(2 marks)**

QUESTION FOUR

i) With the help of a diagram, briefly elaborate on the concept of process control block (PCB) **(8 marks)**

ii) State four necessary condition for a deadlock to occur **(8 marks)**

iii) Explain segmentation as used in operating systems. **(4 marks)**

QUESTION FIVE

i) Briefly describe five types of operating systems **(10 marks)**

ii) Briefly elaborate on the main five scheduling algorithms criteria. **(10 marks)**

END