



GARISSA UNIVERSITY

UNIVERSITY EXAMINATION **2017/2018** ACADEMIC YEAR **ONE** **SECOND** SEMESTER EXAMINATION

SCHOOL OF COMPUTER AND INFORMATION SCIENCE
FOR THE DIPLOMA INFORMATION ECHNOLOGY

COURSE CODE: DIT 025

COURSE TITLE: OPERATING SYSTEMS

EXAMINATION DURATION: 3 HOURS

DATE: 10/04/18

TIME: 2.00-5.00 PM

INSTRUCTION TO CANDIDATES

- The examination has SIX (6) questions
- Question ONE (1) is COMPULSORY
- Choose any other THREE (3) questions from the remaining FIVE (5) questions
- Use sketch diagrams to illustrate your answer whenever necessary
- Do not carry mobile phones or any other written materials in examination room
- Do not write on this paper

This paper consists of THREE (3) printed pages

SEM 11, 17/18 main exam (06/04-19/04/18)

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please turn over

Good Luck – Exams Office



QUESTION ONE (COMPULSORY)

- (a) Briefly explain the term operating systems [1 mark]
- (b) State and describe any three roles of the operating system [3 marks]
- (c) As a process executes, it changes state. Highlight the five states of a process [5 marks]
- (d) In which way is an operating system responsible for processor / process management [6 marks]
- (e) State and describe the three types of scheduling [9 marks]

QUESTION TWO

- (a) Define the term deadlock [1 mark]
- (b) State the four necessary conditions for a deadlock to occur. [4 marks]
- (c) Outline and explain memory allocation technique [9 marks]

QUESTION THREE

- (a) Briefly discuss the functions of the operating system [8 marks]
- (b) Describe any three goals of scheduling [6 marks]
- (c) Define the term Kernel [1 mark]

QUESTION FOUR

- (a) Define the following terms
 - i. Dispatcher [1 mark]
 - ii. Program counter [1 mark]
 - iii. Scheduler [1 mark]
- (b) Differentiate between non-preemptive and preemptive scheduling [2 marks]
- (c) Briefly describe the four control structure memory table, I/O tables, file tables and process tables used by an operating system [10 marks]



QUESTION FIVE

(a) Describe the following terms

- i. Terminal driver [3 marks]
- ii. Disk drive [3 marks]
- iii. Swapping [3 marks]
- iv. Segmentation [3 marks]
- v. Semaphore [3 marks]

QUESTION SIX

(a) Discuss the securities in Unix [7 marks]

(b) Differentiate between threat and an attack [8 marks]

