JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

UNIVERSITY EXAMINATION FOR THE BACHELOR OF SCIENCE IN INFORMATION AND COMMUNICATION TECHNOLOGY

2nd YEAR 2nd SEMESTER 2019/2020ACADEMIC YEAR

SPECIAL RESIT TWO
MAIN CAMPUS

COURSE CODE: ICT 3211

COURSE TITLE: OPERATING SYSTEMS

EXAM VENUE: **STREAM:**

DATE: **EXAM SESSION:**

TIME: 2.00 HOURS

INSTRUCTIONS:

1. **Answer Question 1 (Compulsory) and ANY other two questions**
2. **Candidates are advised not to write on the question paper**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE 30 MARKS

a) Define the following terms as used in Operating Systems.
    i.   Multitasking and Multiprogramming.   (06 marks)
    ii.   Batch processing and multiprocessor   (06 marks)

b) What is a CPU Scheduler?   (04 marks)

c) What is the main advantage of the layered approach to operating system design?
                                          (02 marks)

d) What are the disadvantages of using the layered approach in OS?   (06 marks)

e) Explain the concept of busy waiting as used in operating systems.   (06 marks)

QUESTION TWO 20 MARKS

a) What is the purpose of system call?   (02 marks)

b) Using a Block diagram explain the Concept of a System Call.   (18 marks)

QUESTION THREE 20 MARKS

a) What is meant by inter process communication?   (02 marks)

b) Explain the two fundamental models of inter process communication.   (08 marks)

b) Differentiate between pre-emptive and non-pre-emptive scheduling.   (04 marks)

c) With a suitable example, explain what the state of the processor is when a process is waiting for some event to occur?   (06 marks)

QUESTION FOUR 20 MARKS

a) What are the five major activities of an operating system in regard to process management?   (10 marks)

b) List three examples of deadlocks that are not related to a computer system environment.
                                          (06 marks)

c) List 4 reasons for process termination.   (04 marks)

QUESTION FIVE 20 MARKS

a) Explain the following terms   (08 marks)
    i.   Throughput
    ii.   Turnaround time
    iii.   Waiting time
    iv.   Response time

b) Describe four circumstances under which a running process can be terminated by an operating system.   (04 marks)

c) State four characteristics of a suspended process.   (08 marks)