



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR

1ST YEAR 1ST SEMESTER 2016/2017 ACADEMIC YEAR

MAIN CAMPUS (RESIT)

COURSE CODE: SCS 3111 /SCS 101

COURSE TITLE: COMPUTER ORGANISATIONS AND APPLICATIONS

EXAM VENUE: LAB 1

STREAM: BED

DATE : 04/05/ 2016

EXAM SESSION: 11.30 – 1.30PM

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) Distinguish clearly between the following terms
 - i) Hardware and software. (2 marks)
 - ii) System software and application software. (2 marks)
 - iii) Volatile memory and non-volatile memory. (2 marks)
 - iv) Input devices and output devices. (2 marks)
- b) Name the two parts of the central processing unit (CPU). What is the function of each. (2 marks)
- c) Convert 290_{10} to the following number systems and show the steps.
 - i) Binary. (3 marks)
 - ii) Octal. (3 marks)
 - iii) Hexadecimal. (3 marks)
- d) Using a diagram, describe the basic operations of a computer system. (8 marks)
- e) Name three main building blocks of computer systems according to Von Neumann model. (3marks)

QUESTION TWO [20 MARKS]

- a) What is word processor? Give two examples. (2marks)
- b) Draw and describe the block diagram that shows major relationship between CPU components according to Von Neumann model. (10marks)
- c) State and explain any for types of computer networks you know. (8marks)

QUESTION THREE [20 MARKS]

- a) Briefly discuss five characteristics of computers. (10 marks)
- b) What is the difference between warm boot and cold boot? (2 marks)
- c) Briefly discuss about the following software threats:
 - i) Virus (2 mark)
 - ii) Worm (2 mark)
 - iii) Trojan Horse (2 mark)
 - iv) Zombie (2 mark)

QUESTION FOUR [20 MARKS]

- a) Explain the term 'computer program'. (2 marks)
- b) Briefly list and explain any four features of a word processor. (8 marks)
- c) Define an Operating System and explain any three functions of an operating system. (8 marks)
- d) Explain what is meant by a "Write Once Read Many" in relation to Compact Disks. (2 marks)

QUESTION FIVE [20 MARKS]

a) Perform the following complement changes:

i) $(r-1)$'s complement of N

I. $N = 76592_{10}$

(2 marks)

II. $N = 100111_2$

(2 marks)

ii) r 's complement of N

I. $N = 45092_{10}$

(2 marks)

II. $N = 110101_2$

(2 marks)

b) Examination officers normally create a mark sheet, which they use to record examination marks after students have sat for examinations at the end of the semester. The mark sheet includes the following columns in MS EXCEL in the order given

I. FIRST NAME

VI. ASSIGNMENT TWO

II. MIDDLE NAME

VII. CAT ONE

III. REG NO

VIII. CAT TWO

IV. UNITS DONE

IX. TOTAL MARKS

V. ASSIGNMENT ONE

X. REMARKS

Required:

i. Create a sketch of this tabulated data and include a sample of only three students (2marks)

ii. Name and explain how you would use one of the functions provided by MS EXCEL to combine the first name and middle name columns into one column called "Names" which replaces the two columns (3 marks)

iii. Establish the formulas that generate the column

1. Total marks that includes the CATs and ASSIGNMENTS marks (2 marks)

2. Mean score for the all the students that did the examination (2 marks)

3. Remark(whose output is Grade A-E generated from the total mark where A is 70% and above, B is 60%-69%, C is 50%-59%, D is 40%-49% and E is below 40%. (3 marks)