# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

### *Faculty of Engineering and Technology*

## DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATIONS FOR DEGREE IN
BACHELOR OF TECHNOLOGY IN INDUSTRIAL MICROBIOLOGY &
BIOTECHNOLOGY **(YR II SEM II)**

### ICS 2215 : INFORMATION TECHNOLOGY II

END OF SEMESTER EXAMINATIONS
**SERIES:** AUGUST/SEPTEMBER 2011
**TIME:** 2 HOURS

**Instructions to Candidates:**
You should have the following for this examination
- *Answer Booklet*

This paper consist of **FIVE** questions in **TWO** sections **A** & **B**
Answer question **ONE (COMPULSORY)** and any other **TWO** questions
Maximum marks for each part of a question is as shown
This paper consists of **THREE** printed pages

**SECTION A (***Compulsory – 30 MARKS***)**

**Question ONE**

a) (i)  Explain the following terms as applied on the Internet and give ONE example where
Appropriate
  i)    Home page
  ii)   Web browser
  iii)  Search Engine                                                            (6 marks)

  (ii)  Change the following decimal IP address to binary format:-        (3 marks)
        201.61.186.227

b) (i)  Describe an application simulation                                    (1 marks)

  (ii) Differentiate between in-house and packaged software.                 (2 marks)

  (iii)  Outline **THREE** reasons for preferring in-house software to packaged software  (3 marks)

c) Explain the following as used in databases:

(i) Relationship (1 marks)
(ii) Primary key. (1marks)

d) (i) What is a DBMS? (1 marks)

(ii) Give one example of a DBMS (1 marks)

**SECTION** B (Attempt any TWO questions from this section)

**Question TWO** *(20 Marks)*

a) (i) Describe TWO major types of software giving an example of each. (4 marks)

(ii) An organization which has been using a manual based system in handling its business transactions has decided to introduce a computerized system so as to respond to the market forces. State **FOUR** advantages that are likely to be realized as a result of using computerized Transaction Processing System. (4 marks)

b) Describe a distributed system and outline its importance in industry/business organizations.
(8 marks)

c) (i) Explain the use of Macro in application software.

(ii) Outline **TWO** differences between Artificial Intelligence and Human Intelligence (4 marks)

**Question THREE** *(20 Marks)*

a) Describe the following areas of artificial intelligence giving example of each.

(i) Robotics
(ii) Expert Systems (4 marks)

b) Fuzzy logic, a branch of artificial intelligence, offers business improvements over the simplistic binary choices offered by many computer systems.

(i) Describe fuzzy logic (2 marks)
(ii) State **TWO** applications of fuzzy logic in business (2marks)

c) (i) Explain **THREE** benefits realized with the introduction of an operating system in the application of computers. (6 marks)

(ii) Explain **THREE** environmental problems that may threaten the safety of computers in an organization. (6 marks)

**Question FOUR** *(20 Marks)*

a) Explain the following as used in spreadsheets

i) Worksheet
ii) Cell referencing (4 marks)

b) The table below shows a list of students and the marks they obtained in a given examination

| S/N | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | NAME | MATHS | PHYSICS | ENGLISH | TOTAL | AVERAGE | RESULTS |
| 2 | PETER | 50 | 58 | 40 | | | |
| 3 | JOHN | 75 | 89 | 56 | | | |
| 4 | JANE | 46 | 69 | 25 | | | |
| 5 | MARY | 59 | 78 | 56 | | | |
| 6 | PAUL | 88 | 62 | 71 | | | |
| 7 | HIGHEST TOTAL MARK | | | | | | |
| 8 | LOWEST TOTAL MARK | | | | | | |

Write a formula using cell names to compute the following expressions stating the most appropriate cell where the formula is placed.

- i) Total marks for each student. (2 mark)

- ii) Average mark for each student. (2 mark)

- iii) Highest Total Mark (2 mark)

- iv) Lowest Total Mark (2 mark)

- v) If the pass mark is an average of 60 marks and above, write a formula to indicate the RESULT as 'Pass' or 'Fail' using a logical function for each student. (2 marks)

c) The head teacher wanted to present the marks in (b) to the chairman of the school's Board of Governors so that he can reward the best overall student.

- i) Suggest **ONE** reason why the teacher would prefer to use graphical based presentation as opposed to text based presentation (2 marks)
- ii) Describe **TWO** types of graphs which the head teacher can use during the presentation. (4 marks)

**Question FIVE** *(20 Marks)*

(i) With aid of diagrams describe any **THREE** network topologies (6 marks)

(ii) Explain any **TWO** disadvantages of using e-mail (4 marks)

(iii) Describe any **THREE** advantages of using computer networks in a transportation company (6 marks)

(iv) Explain any **TWO** hardware components required to connect to internet (4 marks)