EMBU UNIVERSITY COLLEGE

(A Constituent College of the University of Nairobi)

2015/2016 ACADEMIC YEAR

SECOND SEMESTER EXAMINATION

FIRST YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (ANALYTICAL CHEMISTRY) AND BACHELOR OF SCIENCE (INDUSTRIAL CHEMISTRY
SCI 104: FOUNDATIONS OF COMPUTER SCIENCE

DATE: APRIL 8, 2016   TIME: 02:00-04:00PM

INSTRUCTIONS:

Answer Question ONE and ANY other two Questions

QUESTION ONE

a) Explain the following computing concepts   (4 Marks)

    i)   Multiprocessing

    ii) Multiprogramming

b) Explain the most famous approaches for accessing files in a computer system.

(4 Marks)

c) Briefly explain the role of cache memory in computer system. Further explain how it works
(4 Marks)

d) Electronic commerce transactions are becoming common place today as internet spreads across the globe. In your own words, list any **four** advantages of electronic commerce
(4 Marks)

e) Discuss any **four** operations that any computer system performs   (4 Marks)

f) Compare and contrast computer main memory and secondary memory   (5 Marks)

g) List and explain any **five** operations associated with computer files   (5 Marks)

QUESTION TWO

a) Computer software is divided into system and application software. Discuss any **three** types of system software and **two** types of application software

(10 Marks)

b) Discuss any **five** areas where computers can be applied in the field of Chemistry

(10 Marks)

QUESTION THREE

a) With the aid of a well-labeled diagram, describe the components of a computer system

(10 Marks)

b) Convert the following into decimal number system   (10 Marks)

   i) 2314_8

   ii) 3871_8

   iii) $8CD_{16}$

   iv) $BB9A_{16}$

   v) 111011_2

QUESTION FOUR

a) A computer without an operating system is non-functional. Explain any **five** functions of operating systems.

(10 Marks)

b) Computer networks have become a common occurrence in most organizations today. Describe **any five** advantages of having computer networks in organizations

(10 Marks)

QUESTION FIVE

a) There are various strategies used to acquire software. Among the options, outsourcing the development to third parties can be deployed. Discuss any **four** disadvantages associated with outsourcing strategy   (8 Marks)

b) Explain any **six** factors used to decide the network topology to adopt when connecting computers.   (12 Marks)

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