ALUPE UNIVERSITY

OFFICE OF THE DEPUTY VICE CHANCELLOR

ACADEMICS, RESEARCH AND STUDENTS AFFAIRS

UNIVERSITY EXAMINATIONS

2022/2023 ACADEMIC YEAR

SECOND YEAR FIRST SEMESTER REGULAR MAIN
EXAMINATION

FOR THE DEGREE OF BACHELOR COMPUTER SCIENCE

COURSE CODE: COM 312

COURSE TITLE: Software Engineering II

DATE: 20TH DECEMBER 2022   TIME: 9-12PM

INSTRUCTION TO CANDIDATES

- SEE INSIDE

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COM 312: Software Engineering II

STREAM: BSc (Computer Science   **DURATION: 3 Hours**

INSTRUCTIONS TO CANDIDATES

i.   *Answer Question **ONE** and any other **THREE** questions*

ii. *Do not write on the question paper*

Question One [24 Marks]

a) Discuss the three characteristics of an e – type software   [6 marks]

b) Discuss two software cost estimation techniques   [4 Marks]

c) You have been hired to develop an online student voting system for Alupe University.

    i.   Brief explain the process of coming up with modules in software engineering   [2 marks]

    ii. Identify any four possible modules for this voting system

    iii. Discuss any two tools you will use in the voting system analysis explaining were they will be applied   [4 marks]

d) Project Management is concerned with the activities involved in ensuring that software and other information technology related projects are delivered on time and on schedule and also in accordance with the requirement of organizations developing and procuring the software. Discuss how time, schedule and resources can affect the quality attributes of software product

[8 Marks]

Question Two [12 Marks]

a) Students from Alupe university wants to strike because they are unable to known their performance. As a solution, the university senate has agreed on two solutions, one long time and the other short term. Clearly stating four differences, discuss the two software development approaches you would apply to this two solutions   [8 marks]

b) Explain two types of interfaces that a software engineer can use   [4 marks]

Question Three [12 Marks]

a) Define the term software project management   [2 Marks]

b) Explain four tools that can be used in project management   [8 Marks]

c) List six types of cohesion applied in software development   [2 Marks]

Question Four [12 Marks]

a) Software maintenance can be done in four different ways. Listing two advantages and two disadvantages discuss this techniques   [12 Marks]

Question Five [12 Marks]

a) State any two cost estimation costs [2 Marks]

b) Define the term feasibility study as applied in software engineering [2 marks]

c) Create a level 0 DFD diagram for a fruit kiosk [8 marks]

Question Six [12 Marks]

a) Defines the following term Software testing and explain why it is important in software development [4 Marks]

b) Differentiate between deliverable and milestones [2 Marks]

c) Discuss the three levels of software design [6 marks]

Question Seven [12 Marks]

a) Differentiate between function and non-functional requirements using Mpesa as a sample [4 marks]

b) Discuss any four levels levels of coupling [4 Marks]

c) Lehman has given laws for software evolution. He divided the software into three different categories.

    i) What are the laws for software evolution [1 marks]

    ii) Discuss the three categories [3 marks]