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**KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATIONS, 2020/2021 ACADEMIC YEAR
FOURTH YEAR, FIRST SEMESTER EXAMINATIONS
FOR THE DEGREE OF BACHELOR OF SCIENCE
(COMPUTER SCIENCE)**

KCS 405 - ADVANCED SOFTWARE ENGINEERING

Date: 14th December, 2020
Time: 2.30pm – 4.30pm

INSTRUCTION TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Describe three types of software products that can be engineered. (6 Marks)
- b) Explain three principles that play a major role in development of software. (6 Marks)
- c) Describe two design approaches to software development. (4 Marks)
- d) A company wants to develop a software to enable it solve some management problems. Explain why the software to be developed should go through an engineering process (4 Marks)
- e) Describe four activities that are fundamental to software engineering. (6 Marks)
- f) Explain four skills required of a project manager in software development. (4 Marks)

QUESTION TWO (20 MARKS)

- a) In designing a software an architecture can be modelled to provide a blue-print for the system. Describe Three design quality attributes that the architecture must demonstrate (6 Marks)
- b) A development team has just concluded a software project and intent to check the quality of the software. Explain Four factors the team should consider in checking the quality of a software. (8 Marks)
- c) Describe three techniques an analyst may use in eliciting requirements for a system (6 Marks)

QUESTION THREE (20 MARKS)

- a) As a software developer describe Three development models that can be used in software engineering. (6 Marks)
- b) You have been contracted to manage a software project of a company. Explain four activities that you must perform when managing the software project. (8 Marks)
- c) Explain three parameters that must be considered when testing the reliability of a software. (6 Marks)

QUESTION FOUR (20 MARKS)

- a) An analyst intends to use a DFD to model the requirements of a software system. Describe two DFDs he can consider for use (4 Marks)
- b) Explain three measurement metrics that can be considered during software development (6 Marks)
- c) Describe four characteristics of an SRS. (6 Marks)
- d) Explain two cost factors involved in software maintenance. (4 Marks)

QUESTION FIVE (20 MARKS)

- a) You have been employed in a company as a system administrator. Explain three types software maintenance that you are likely to perform. (6 Marks)
- b) Describe three types of ISO 9000 Quality Standards. (6 Marks)
- c) Describe four types of module coupling. (8 Marks)