



PAN AFRICA CHRISTIAN UNIVERSITY

DICT

END-OF-TERM EXAMINATION

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY

COURSE CODE: DICT0212

CAMPUS: ROYSAMBU

COURSE TITLE: SOFTWARE ENGINEERING

EXAM DATE: THURSDAY 01/08/2024

TIME: START: 14:30 HOUR 17:30 HRS

INSTRUCTIONS

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other **THREE** questions in Section **B**.
- None programmable calculators permitted

SECTION A

(Answer ALL questions in this section)

QUESTION ONE

EduTech, an educational technology company, aims to develop an innovative Learning Management System (LMS) designed to enhance online education for universities and colleges. The LMS will offer features such as course management, student tracking, assessments, forums, and multimedia content delivery. The company intends to adopt Agile methodologies to ensure a flexible and adaptive development process. EduTech's LMS project involves a multidisciplinary team, including software engineers, quality assurance testers, product managers, and UX/UI designers. The project will follow a structured software development process with an emphasis on continuous integration and continuous delivery (CI/CD).

- a) Explain how the objectives of EduTech align with the fundamental objectives of software engineering. **(2 Marks)**
- b) Identify TWO key stakeholders in the EduTech LMS project. **(2 Marks)**
- c) Justify the software development lifecycle (SDLC) model that would be most appropriate for the EduTech LMS project. **(2 Marks)**
- d) State TWO strategies to manage defects and ensure high software quality in the EduTech LMS project **(2 Marks)**
- e) Discuss how the EduTech team can ensure effective communication and collaboration throughout the development process. **(2 Marks)**

QUESTION TWO

- a) As a junior software engineer, state how you can implement continuous integration and continuous delivery (CI/CD) to improve the development process **(2 Marks)**
- b) Using TWO relevant examples explain the role of user stories in Agile development **(4 Marks)**
- c) Highlight FOUR levels of testing applicable to software engineering **(4 Marks)**

QUESTION THREE

- a) In software engineering, it's agreed that effort is required for the explicit software architecture of a system. Discuss any THREE reasons why this is important.

(6

Marks)

- b) Outline FOUR attributes of a well-engineered software

(4 Marks)

QUESTION FOUR

As manager of DigiTech Software engineering firm:

- a) Propose a FOUR-point plan for performing usability testing on new software products.

(4

Marks)

- b) State any THREE aspects to be evaluated in the testing

(3 Marks)

- c) Explain THREE ways to incorporate user feedback into the development process

(3

Marks)

QUESTION FIVE

- a) Describe THREE Quality management activities that you may apply in your capacity as a junior software engineer in XYZ Development Company

(6 Marks)

- b) Explain the following approaches to software Quality assurance and standards

(4

Marks)

- i. Product Standards
- ii. Process Standards

QUESTION SIX

- a) Explain any THREE areas of concern in software fitness for purpose **(3 Marks)**

- b) Outline THREE significances for agile methods to software development

(3 Marks)

- c) Differentiate between functional and non-functional requirements in software development

(4 Marks)

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EXAMINATIONS PAPER**



End of Exam