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**JOMO KENYATTA UNIVERSITY**

**OF**

**AGRICULTURE AND TECHNOLOGY**

 **UNIVERSITY EXAMINATIONS 2016/2017**

**YEAR II SEMESTER II EXAMINATION FOR THE DIPLOMA IN INFORMATION TECHNOLOGY**

**DIT 0401: SOFTWARE ENGINEERING**

**DATE: APRIL 2017 TIME: 1 ½ HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE (30 MARKS)**

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 the organizations’ developing and procuring the software.

1. Discuss any FIVE attributes of software projects. [5 marks]
2. Discuss the major distinctions between industrial projects and those related to information technology. [3 marks]
3. Discuss any FIVE reasons why software projects fail before completion. [5 marks]
4. Discuss the FOUR P’s of software project management. [4 marks]
5. Name and explain any TWO project management software’s. [2 marks]
6. Explain any FIVE categories of web based applications. [5 marks]
7. Highlight any FIVE attributes of web engineering (WEBE) applications. [5 marks]
8. Define the term Web Engineering. [1 mark]

**SECTION B**

**QUESTION TWO (15 MARKS)**

Risk management in software project management is a core component to be taken into consideration.

1. Define the term risk management. [2 marks]
2. Using a diagram, describe the risk management process. [4 marks]
3. State and explain at least SEVEN examples of common project, product and business risks. [7 marks]
4. Describe at least TWO strategies to help manage risks in project management. [2 marks]

**QUESTION THREE (15 MARKS)**

In a software project, a requirements specification should be produced before design begins.

1. Explain why a written requirements specification is such an important document. [4 marks]
2. Explain any THREE characteristics of software requirement. [3 marks]
3. Explain the software requirement engineering process. [4 marks]
4. Distinguish between functional requirement and non-functional requirements. [4 marks]

**QUESTION FOUR (15 MARKS)**

Explain the following software development methodologies;

1. Agile development
2. Extreme (XP) programming
3. Spiral model development
4. Rapid Application Development (RAD)
5. Joint Application Development (JAD) [15 marks]

 [each 3 marks]

**QUESTION FIVE (15 MARKS)**

Programming methodologies aims to produce high quality software products;

1. Define the term software quality [1 mark]
2. State any FIVE reasons why software testing is important. [5 marks]
3. Distinguish between machine language and assembly language. [4 marks]
4. Explain THREE reasons why software engineering is important. [3 marks]
5. Define the term CASE TOOLS as used in software engineering. [2 marks]