KABARAK   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

MAIN CAMPUS

FIRST SEMESTER, 2019/2020 ACADEMIC YEAR

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER SCIENCE

COMP 444-RAPID APPLICATION DEVELOPMENT

STREAM: Y4S2   **TIME: 2:00-4:00PM**

EXAMINATION SESSION: SEP-DEC   **DATE:16/12/2019**

VENUE: AUDITORIUM   **COPIES: 35**

INSTRUCTIONS TO CANDIDATES

1. **Answer Question 1 and any other two questions in the answer booklet provided.**

2. **Do not write on your question papers. All rough work should be done in your answer booklet.**

3. **Clearly indicate which question you are answering.**

4. **Write neatly and legibly.**

5. **Edit your work for language and grammar errors.**

6. **Follow all the instructions in the answer booklet**

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SECTION A: (Compulsory) TOTAL MARKS FOR THIS SECTION IS 30.

QUESTION ONE (30 Marks)

    a. State the Advantages of RAD.   [5 marks]

    b. Discuss the components of the CASE tools for RAD.   [4 marks]

    c. Rapid Application Development projects estimation determines how much money, effort, resources, and time it will take to build a specific system or product. On what factors is estimation based?   [4 marks]

    d. State the SIX factors that affect the accuracy of estimates.   [6 marks]

    e. Define the term buffer in the context of RAD project estimation and discuss its usage in project estimation.   [6 marks]

    f. Outline FIVE reasons why Teamwork in RAD projects is important   [5 marks]

SECTION B. TOTAL MARKS FOR THIS SECTION IS 40.

ANSWER ANY TWO QUESTIONS FROM THIS SECTION. EACH QUESTION IN THIS SECTION CARRIES 20 MARKS.

QUESTION TWO (20 Marks)

a. In businesses today, traditional methods of software development are being replaced more and more by modern processes like RAD. Discuss at least THREE of the issues related to traditional software development processes.   [6 marks]

b. State the FOUR steps in Rapid Application Development Process.   [4 marks]

c. Rapid Application Development has FOUR essential aspects. Briefly discuss Methodology as one of the aspects.   [6 marks]

d. Write a note on the following

      i.   Requirements planning Team.   [2 marks]

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ii.   Construction (SWAT) Team.   [2 marks]

QUESTION THREE (20 Marks)

a. CASE tools are set of software application programs, which are used to automate SDLC activities. Discuss at least THREE types of CASE tools.   [6 marks]

b. Estimation is the process of finding an estimate, or approximation, which is a value that can be used for some purpose even if input data may be incomplete, uncertain, or unstable. State the FOUR basic steps in Software Project Estimation.   [4 marks]

c. State at least SIX important factors that affect estimation accuracy in RAD projects.

[4 marks]

d. Define the term Variance and using an example, explain how variance is calculated.

[6 marks]

QUESTION FOUR (20 Marks)

a. The *project schedule* is a calendar that links the tasks to be done with the resources that will do them. Discuss Effort and duration concepts as used in RAD project scheduling.

[4 marks]

b. Assume you are a project manager is a software Development environment that uses RAD methodology in developing applications and a client has given you a task that is needed within a short span of time and this means you have to work with a tight or even unrealistic schedule. Highlight at least SIX problems associated with unrealistic schedules that you are likely to encounter.

[6 marks]

c. While building RAD project schedules, identifying dependencies is one of the steps that have to be followed, discuss how this is achieved.   [6 marks]

d. Teamwork is a term used for joining the efforts of bringing members in a project or business together to achieve a common goal. In the context of RAD, discuss the importance of teamwork.   [4 marks]

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QUESTION FIVE (20 Marks)

a. State THREE advantages of Smoke testing. [3 marks]

b. Integration Testing is the second level of testing performed after Unit Testing and before System Testing. Explain the FOUR approaches to integration testing. [4 marks]

c. The Agile approach to application development embraces the constant changes that occur in the development of technology – allowing teams to break the lengthy requirements, build, and test phases down into smaller segments, ultimately delivering working software quickly and more frequently. List down at least FOUR stages of agile process flow. [4 marks]

d. The goal of time boxing is to define and limit the amount of time dedicated to an activity. What are the requirements that must be met to conduct a project, or part of the project, within a time box? [3 marks]

e. With the help of a diagram, discuss the Throw-away prototyping model [6 marks]

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