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**KABARAK UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**TOWN CAMPUS**

**SECOND SEMESTER, 2020/2021 ACADEMIC YEAR**

**EXAMINATION FOR THE DEGREE OF BACHELOR SCIENCE IN COMPUTER SCIENCE**

**COMP 313 INTE 326 SOFTWARE ENGINEERING**

**STREAM: Y3S1/Y3S2 TIME: 11:30-1:30PM**

**EXAMINATION SESSION: MAY-AUGUST DATE: 26/08/2021**

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

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

1. What is the difference between hardware product and software product life. Explain with the aid of curves **[5 marks]**
2. Why is the requirement analysis study required in software engineering? **[2 marks]**
3. One of the fundamental objectives of any project is to collect all types of requirements. differentiate the two types of requirements with their examples **[4 marks]**
4. “It is easier to correct an errors at or before the design phase”. Justify this statement **[2 marks]**
5. What is Data Flow Diagram? Interpret the notations used **[5 marks]**
6. What is the role of computer science knowledge in software engineering **[2 marks]**
7. Relate reverse engineering and reengineering in software maintenance **[2 marks]**
8. Show the three categories of risks giving examples in each **[3 marks]**
9. State any five questions that needs to be answered in order to develop a project plan using the W5HH principle **[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.**

**2.**

1. Describe any three benefits of a software requirement specification(SRS) document **[3 marks]**
2. An effective software system should adopt a modular design rather than monolithic design. Distinguish between the two designs **[2 marks]**
3. Explain the empirical Technique of software estimationand give the general structure of empirical model **[4 marks]**
4. How does an SRS provide a baseline for software testing? **[2 marks]**
5. Discuss any four methods that can be used in requirements elicitation **[4 marks]**
6. Illustrate the incremental model of software development. What are some of its strengths **[5 marks]**

**3.**

1. Describe the requirement engineering process in detail **[10 marks]**
2. Describe the divide and conquer approach analogy of problem solving in relation to modularity design **[5 marks]**
3. Draw a Context diagram and a Data Flow Diagram that represents an employee management system. Use the diagram to show the transition of data in a system **[5 marks]**

**4.**

1. How does system analyst gather the requirements during requirements analysis? **[2 marks]**
2. Demonstrate the use of Data Flow Diagram(DFD) with an example of a system having atleast three entities **[5 marks]**
3. What is the significance of guidelines for coding in software maintenance **[2 marks]**
4. You are a project manager for a development organization. You have been asked to lead a team that is developing Employees management system. Create a risk table for the project **[4 marks]**
5. Describe the Rapid Application Development(RAD) model of software development. What are some of its strengths **[4 marks]**
6. Explain the three challenges of maintenance **[3 marks]**

**5.**

1. In the absence of a previous working system, how is a system analyst required to gather the requirements of a new system **[2 marks]**
2. Express the significance of the building blocks for CASE tools. **[5 marks]**
3. What are the activities performed under unit testing how does regression testing help software maintenance **[5 marks]**
4. If some existing modules are to be re used in building a new system explain any three software reusable components **[3 marks]**
5. A software system is to be developed that will be used to control medical machines. What would be the suitable model to use to develop this system? Explain how development will proceed under this model **[5 marks]**