

KABARAK



UNIVERSITY

UNIVERSITY EXAMINATIONS
SECOND SEMESTER, 2018/2019 ACADEMIC YEAR

EXAMINATION FOR THE DEGREE OF BACHELOR SCIENCE IN
COMPUTER SCIENCE/BMIT/IT/BBIT/BSCF

COMP 313/INTE 326: SOFTWARE ENGINEERING

STREAM: Y3S1

TIME: 11.00-1.00PM

EXAMINATION SESSION: JAN- APRIL

DATE: 10/04/2019

VENUE: KTC

COPIES:20

INSTRUCTIONS:

- 1. This question paper has five questions**
- 2. QUESTION ONE IS COMPULSORY AND HAS 30 MARKS**
- 3. Answer any other two questions worth 20 marks each.**

QUESTION ONE (30 marks)

- a) What is the difference between hardware product and software product life.
Explain with the aid of curves **(5mks)**
- b) Why is the requirement analysis study required in software engineering? **(2mks)**
- c) One of the fundamental objectives of any project is to collect all types of requirements. differentiate the two types of requirements with their examples **(4mks)**
- d) “It is easier to correct an errors at or before the design phase”. Justify this statement **(2mks)**

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(1 Peter 3:15)
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- e) What is Data Flow Diagram? Interpret the notations used (5mks)
- f) What is the role of computer science knowledge in software engineering (2mks)
- g) Relate reverse engineering and reengineering in software maintenance (2mks)
- h) Show the three categories of risks giving examples in each (3mks)
- i) State any five questions that needs to be answered in order to develop a project plan using the W5HH principle (5mks)

QUESTION TWO (20 marks)

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

QUESTION THREE (20 marks)

- (a) Describe the requirement engineering process in detail (10mks)
- (b) Describe the divide and conquer approach analogy of problem solving in relation to modularity design (5mks)
- (c) 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 (5mks)

QUESTION FOUR (20 marks)

- a) How does system analyst gather the requirements during requirements analysis?
(2mks)
- b) Demonstrate the use of Data Flow Diagram(DFD) with an example of a system having atleast three entities
(5mks)
- c) What is the significance of guidelines for coding in software maintenance (2mks)
- d) 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
(4mks)
- e) Describe the Rapid Application Development (RAD) model of software development. What are some of its strengths
(4mks)
- f) Explain the three challenges of maintenance
(3mks)

QUESTION FIVE (20 marks)

- a) In the absence of a previous working system, how is a system analyst required to gather the requirements of a new system
(2mks)
- b) Express the significance of the building blocks for CASE tools.
(5mks)
- c) What are the activities performed under unit testing how does regression testing help software maintenance
(5mks)
- d) If some existing modules are to be re used in building a new system explain any three software reusable components
(3mks)
- e) 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
(5mks)