



UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA
FIRST SEMESTER EXAMINATIONS, NOV. – DEC. 2018

COURSE NO: CE 377

COURSE NAME: SOFTWARE DEVELOPMENT AND MANAGEMENT

CLASS: CE III

TIME: 3 HRS

Name: _____ Index Number: _____

Answer all questions in SECTION A and Any other 2 QUESTIONS in SECTION B

1. Which one of these is not a project development activity?
 - a. Planning
 - b. Organizing
 - c. Operating
 - d. Tracking
2. Which one of the following is not a stage in the Software Development Life Cycle?
 - a. System Analysis
 - b. Problem Identification
 - c. System Design
 - d. Feasibility Study
3. An iterative process of system development in which requirements are converted into a working system that is continually revised through close work between an analyst and user is called
 - a. Waterfall Modeling
 - b. Iterative Modeling
 - c. Spiral Modeling
 - d. None of the Above
4. The first step in Software Development Life Cycle?
 - a. Preliminary Investigation and Analysis
 - b. System Design
 - c. System Testing
 - d. Coding
5. True or False? It is better to discover defects later in the development process. That way you can have more of the system finished before you worry about fixing things.
 - a. True
 - b. False
6. Prototyping aims at
 - a. End user understanding and approval
 - b. Planning of dataflow organization
 - c. Program logic
 - d. None of the Above
7. The main goal of feasibility is not to solve the problem, but to achieve

- a. Detailed Specification
 - b. Greater Requirement Accuracy
 - c. Project Scope
 - d. Functional Requirements
8. The following are essential elements of design patterns **EXCEPT**.
- a. Problem Description
 - b. Solution Description
 - c. Consequence
 - d. Consensus
9. In the Analysis phase, the development of the _____ occurs, which is a clear statement of the goals and objectives of the project.
- a. Documentation
 - b. Flowchart
 - c. Program Specification
 - d. Design
10. Actual programming of software code is done during the _____ step in the SDLC.
- a. Maintenance and Evaluation
 - b. Design
 - c. Analysis
 - d. Development and Documentation
11. In Design phase, which is the primary area of concern?
- a. Architecture
 - b. Data
 - c. Interface
 - d. All of the Above
12. If your project has unstable requirements (i.e. that is prone to change), you should use the waterfall process model.
- a. True
13. False
14. According to the IEEE standards, a system specification requirement document should be
- a. Complete
 - b. Consistent
 - c. Modifiable
 - d. All of the Above
15. The importance of software development can be summarized into a single word which is
- a. Efficiency
 - b. Accuracy
 - c. Quality
 - d. Complexity
16. Which of the following is **NOT** considered a risk in project management?
- a. Specification Delays
 - b. Product Competition
 - c. Testing
 - d. Staff Turnover
17. Which of the following is **NOT** a project management goal?
- a. Keeping overall cost within Budget
 - b. Delivering the software to the customer at the agreed time
 - c. Maintaining a happy and well-functioning development team
 - d. Avoiding Customer Complaints
18. Project managers have to assess the risks that may affect a project.
- a. True
 - b. False

19. What often-false assumption does the waterfall model make about requirement specification
- a. Specifications are predictable
 - b. Specifications are stable
 - c. Specifications have low change rate
 - d. All of the above
20. What is the other name of Software Requirement Specification (SRS)?
- a. Project Charter
 - b. User Requirement Document
 - c. Software Requirement Document
 - d. Project Requirement Document
21. Which of the following is an incorrect activity for the configuration management of a software system
- a. Internship Management
 - b. Change Management
 - c. Version Management
 - d. System Management
22. If a software development process gets behind schedule, one can add more programmers to catch up.
- a. True
 - b. False
23. Which one of the following is not a fundamental activity for software processes in software engineering?
- a. Software Verification
 - b. Software Evolution
 - c. Software Validation
 - d. Software Specification
24. In software engineering, defects that are discovered are to fix.
- a. Earlier; more expensive
 - b. Later; more expensive
 - c. By customers; more difficult
 - d. By developers; more difficult
25. Use-case analysis focuses on
- a. Objects and Information
 - b. Actors and Information
 - c. Entities and Data
 - d. Actors and Data
26. Component-Based Software Engineering allows faster delivery.
- a. True
 - b. False
27. It is often difficult to estimate the size at an early stage in a project when only a specification is available.
- a. True
 - b. False
28. Which of the following is meant by a **Software Development Process**?
- a. An organization or structure imposed on the tasks and activities involved in developing a software product
 - b. Tools, such as Git, that developers use to accomplish their software engineering goals.
 - c. Is an engineering discipline concerned with all aspects of software production

- d. Concerned with adhering strictly to the SDLC
29. The individual or organization who wants a product to be developed is known as.
- a. End User
 - b. Product Initiator
 - c. Client
 - d. Developer
30. In the maintenance phase of the SDLC, the product must be tested against previous test cases. This is known as testing?
- a. Unit
 - b. Integration
 - c. Beta
 - d. Regression
31. The relationship between a derived class (subclass) and a base class is referred to as.
- a. Association
 - b. Inheritance
 - c. Aggregation
 - d. Polymorphism
32. A design is said to be a good design if the components are
- a. Strongly Coupled
 - b. Weakly Cohesive
 - c. Strongly coupled and strongly cohesive
 - d. Strongly cohesive and weakly coupled
33. The software development approach in which development combines elements of both design and prototyping in stages is known as:
- a. Rapid Application Development
 - b. Waterfall Approach
 - c. Spiral Development Approach
 - d. Prototyping Approach
34. Which term is best defined in the following text?
- Development of a system through repeated cycles and in smaller portions at a time, allowing software developers to take advantage of what was learned during development of earlier parts or versions of a system.*
- a. Configuration Management
 - b. Iteration Development Process
 - c. Waterfall Development Process
 - d. Rapid Prototyping Process
35. The longer a fault exist in a software
- a. The more tedious its removal becomes
 - b. The more costly it is to detect and correct
 - c. The less likely it is to be properly corrected
 - d. All of the Above
36. Which of the following is **NOT** a characteristic of a software.
- a. Software does not wear out
 - b. Software id flexible
 - c. Software is not manufactured
 - d. Software is not always correct
37. During software development, which factor is most crucial?

- a. People
 - b. Process
 - c. Project
 - d. Product
38. Frameworks are an effective approach to reuse, but are to introduce into software development processes.
- a. Difficult
 - b. Expensive
 - c. Unreliable
 - d. Difficult and Expensive
39. Which of the following is not a benefit of software reuse.
- a. Standards Compliance
 - b. Increased Reliability
 - c. Reduced Process Risk
 - d. Maintaining a Component Library
40. Which of the following is the process of assembling program components, data, and libraries and then compiling and linking to create an executable system.
- a. Component Building
 - b. System Building
 - c. System Release Management
 - d. Version Release Management

SECTION B

Answer two (2) Questions ONLY in this Section.
Each question carries 10 marks

Question 1

- a) Explain why deploying a software as a service can reduce the IT support costs for a company. What additional cost might arise if this deployment model is used? **(3 marks)**
- b) Suggest four (4) reasons why the productivity rate of programmers working as a pair might be more than half that of two programmers working individually. **(4 marks)**
- c) Briefly distinguish between fault avoidance and fault tolerance. **(1 mark)**
- d) Explain why testing can only detect the presence of errors, not their absence **(2 marks)**

Question 2

- a) What are the most important distinctions between services and software components? **(4 marks)**
- b) Why is it important that all component interactions are defined through ‘requires’ and ‘provides’ interfaces? **(2 marks)**
- c) Differentiate between fault tolerance, fault avoidance and fault detection. **(2 marks)**
- d) When will you recommend against the use of an agile method for developing a software system **(2 marks)**

Question 3

- a) What is the fundamental difference components as program elements and components as services? **(2 mark)**
- b) Using an example of a remote procedure call, explain how middleware coordinates the interaction of computers in a distributed system. **(3 marks)**
- c) Explain how the principles underlying agile methods lead to the accelerated development and deployment of system. **(3 marks)**
- d) Give 2 advantages and 2 disadvantages of decentralized and semi-centralized peer-to-peer architecture's. **(2 mark)**