UNIVERSITY OF BUEA FACULTY OF ENGINEERING AND TECHNOLOGY FIRST SEMESTER EXAM 2013/2014	
DEPT: COMPUTER ENGINEERING	COURSE INSTRUCTOR: Bruno Soufo
DATE: 24/01/2014	COURSE CODE: CEF 411
TIME ALLOWED: 2 Hours	TIME:
Answer **ALL** Questions	CREDIT VALUE: 4

PLEASE GIVE ONLY BRIEF ANSWERS TO ALL QUESTIONS

Exercise 1 *(10 Marks)*

Peter and Paul are very strong software developers who are working at the same time on the same project. They are using USB stick to share modifications and updates.

1- On which difficulties (2 marks)

2- As a software engineer, which solution will you propose to them? (2 marks)

3- Propose at least two different softwares according to your solution and classify them into two categories (4 marks)

4- List 4 Git commands and explain their uses (2marks)

Exercise 2 *(10 marks)*

1- What do we mean by an n-tier architecture? (4 marks)

2- What are the tiers in an n-tier architecture? (2 marks)

3- What are the traditional components of an interactive database application? (2 marks)

4- What are some of the potential advantages of a 1-tier architecture over a 3-tier architecture? (2marks)

Exercise 3 *(10 marks)*

1- What is Design Pattern in software engineering? (2 marks)

2- What is the importance of MVC Design Pattern? (2 marks)

3- Give one other Design Pattern which is used in MVC (2 marks)

4- Describe a situation where you will need to use Singleton Design Pattern (2 marks)

1. Which of the following requirement is NOT required to be satisfied by the software requirements document?
a) Specify constraints on the implementation
b) Easy to change
c) Characterize acceptable responses to undesired events
d) Specify the cost

2. Which of the following items are NOT types of interface?
a) Procedural interface
b) Data structures
c) Representations of data
d) System documentation

3. Which of the following is part of the content of non-functional requirements?
a) Statement of services the system should provide
b) How the system should react to particular inputs
c) How the system should behave in certain situations
d) Constraints on the system services and functions

4. Which of the following items represents the requirement type that consists of statements of the services that the system should provide and the constraints of the system?
a) System requirements
b) User requirements
c) Software design specification
d) Domain requirements

5. In software engineering which of the following items represents the descriptions of the services and constraints of the system?
a) Planning
b) Discussions
c) Requirements
d) Definitions

6. Which of the following risk assessment techniques fall in the quantitative approach category?
a) Expected value
b) Decision tree
c) Risk Impact Table
d) Continuous Probability Distribution

7. There are several categories of risks in software development some examples are; new breakthrough design errors or omissions. Which category do the examples fall into?
a) Administrative
b) Technical
c) Environmental
d) Logistical

8. During the project tracking phase which items represents the end of a specially designated activity?
a) Framework
b) Process
c) Model
d) Milestone

9. A software development team needs to choose a specific high-level language (HLL) system development. Which of the following items is the most appropriate consideration criteria for that purpose?
a) Types of users
b) Application domain of the problem
c) The most cost effective language
d) Time needed to develop the system

10. Which development techniques emphasize delivery speed rather than other characteristics such as performance maintainability or reliability?
a) Dynamic prototyping techniques
b) Fast prototyping techniques
c) Rapid prototyping techniques
d) Interactive prototyping techniques

11. A software development team at New Systems Kba. SWR. decides to develop a system prototype from users requirements, get comments from the user then modify it continuously until a complete system has been developed. Which prototyping approach is being used here?
a) Revolutionary prototyping
b) Exploratory prototyping
c) Evolutionary prototyping
d) Throw-away prototyping

12. Which requirement engineering process activity uses prototype to check for errors and omissions in users requirements?
a) Requirements elicitation
b) Requirements gathering
c) Requirements validation
d) Requirements analysis

13. Which requirement engineering process activity allows users to experiment with system prototypes?
a) Requirements elicitation

b) Requirements gathering
c) Requirements validation
d) Requirements analysis

14. Which of the following items is the process of identification and removal of localized implementation errors or bugs from a program or system?
a) Programming
b) Analysis
c) Testing
d) Debugging

15. Which test process stage involves testing related collections of dependent components?
a) Unit testing
b) Subsystem testing
c) Module testing
d) System testing

16. Which types of requirements determines the constrains on the system services of functions?
a) Functional requirements
b) Non functional requirements
c) Domain requirements
d) Interface requirements

17. Software should be written in such a way that it may evolve to meet the changing needs of customers. Which characteristic of a well designed system is being described by the statement?
a) Maintainability
b) Dependability
c) Efficiency
d) Usability

18. Which software production activity involves the production of software?
a) Software validation
b) Software specification
c) Software development
d) Software evolution

19. Which of the following items is an example of software process model that represents the process as a set of activities that will go through data transformation?
a) Role model
b) Design model
c) Data flow model
d) Workflow model

20. Which of the following items is not part of the deliverables that need to be prepared to keep track of project progress?
a) Documents
b) Demonstration of functions
c) Demonstration of testing
d) Demonstration of accuracy

21. Which stage in prototype development involves the definition of prototype functionality?
a) Prototyping plan
b) Executable prototype
c) Outline definition
d) Evaluation report

22. In the incremental development process which stage follows the design "system architecture stage"?
a) Design System Architecture
b) Develop System increment
c) Validate system
d) Deliver final system

23. In the formal system development process which phase follows the formal specifications phase?
a) Requirements definition
b) Unit Testing
c) Intelligent System Testing
d) Integration System Testing

24. Which sector in the spiral development model involves the review of the project and the planning of the next phase of the spiral?
a) Objective setting
b) Risk assessment and reduction
c) Development and validation
d) Planning

25. In the design process model which stage follows the interface design stage?
a) Abstract specification
b) Component design
c) Architectural design
d) Algorithm design

26. Which of the following items is an advantage of using structured natural language for specifying system requirements?
a) Ensure that some degree of uniformity is enforced
b) The specification statement is more precise
c) The language is easy to understand
d) Suitable for complex requirements