NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWASY, JABI-ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF COMPUTER SCIENCE

2022_2 EXAMINATIONS

COURSE CODE : CIT 831
COURSE TITLE : Software Engineering Methodologies
CREDIT UNIT : 3
TIME ALLOWED : 3 HOURS
INSTRUCTION : Answer Questions 1 (One) and Any Other three (3)

QUESTION ONE

1(a) Describe a Software Engineering. (3 marks)

1(b). Differentiate between software Engineering and Computing discipline (3 marks)

1(c) Why is it necessary to do software verification and validation?(2 marks)

1(d) Requirements Elicitation and Analysis is a way of trying to understand the job roles of the stakeholders in an organisation and how a new system could support their work. Software engineers work with stakeholders to find out more about the application domain, services and system properties, work activities of stakeholders, required performance of the system and the hardware constraints of the system. Describe three challenges of Requirements Elicitation and Analysis (6 marks)

1(e) Describe software Process and state the four stages or activities (6 marks)

1(f) Identify three Agile Software Development models (3 marks)

1(g) State two types of interview (2 marks)

[25 marks]

QUESTION TWO

2(a) With the aid of a labelled diagram, describe V- model and state three demerits (6 marks)

2(b) Outline and explain three (3) attributes of a good software (6 marks)

2(c) Enumerate six (6) characteristics of a Quality Software products (***3 marks)***

[15 marks]

QUESTION THREE

3(a) Describe Prototyping model and outline the benefits and challenges (6 marks)

3(b) State the four merits and two demerits of Spiral Model (6 marks)

3(c) Write short notes on the following:

(i) Sub-System
(ii) Module
(iii) Modular Decomposition
(1 mark each)
Answer

[15 marks]

QUESTION FOUR

4(a) The Dynamic Systems Development Method (DSDM) is an agile development method developed in a bid to bring discipline in rapid application development. Briefly describe three Roles of DSDM (6 marks).

4(b) Domain requirements come from the application domain of the system, and describe system characteristics and features that reflect the domain. Briefly describe the two Problems of Domain Requirements (3 marks)

4(c) In a tabular form, describe three different users of a requirement document (6 marks)

[15 marks]

QUESTION 5

5(a) Describe interview as a Requirements Elicitation Techniques, list types and Effective interview (6 marks)

5(b) Requirements validation is concerned with demonstrating that the requirements define the system that the customer really wants. Requirements error costs are high, so validation is very important. Fixing a requirements error after delivery may cost up to 100 times the cost of fixing an implementation error. Requirements check - During a requirements validation process, various checks should be carried out on the requirements contained in the requirements document. Briefly describe three checks.(3 marks)

5(c) Outline two (2) major parts of a Requirement document. **(2 marks)**

5(d) In a tabular form, describe (2) Ways of Writing System Specification (4 marks)

QUESTION 6

6(a) Formal methods are mathematical approaches to software development where a formal model of the software is defined. State three advantages of Formal methods.(3 marks)

6(b) Outline three benefits of Software Re-Use (3 marks)

6(c) State three Testing Stages (3 marks)

6(d) Describe three areas of Professional Responsibility in Software Engineering (6 marks)