



National Open University of Nigeria,
University Village Plot 91 Cadastral Zone,
Nnamdi Azikiwe Express Way, Jabi, Abuja
Faculty of Sciences
2023_1 EXAMINATIONS.

CIT831: SOFTWARE ENGINEERING METHODOLOGIES (3 Credits)

TIME: 3 HRS

INSTRUCTION: Answer 4 Questions. Question 1 is compulsory and any other three questions

Question 1

(a) Write short notes on the following terms:

- (i) System Modelling
- (ii) Sub-system
- (iii) Modular decomposition
- (iv) Formal specification
- (v) Data flow diagrams

(2 marks each)

- b. Outline any 3 requirements validation techniques (3 marks)
- c. Enumerate the benefits of software re-use? (6 marks)
- d. Outline and explain three Attributes of a good software(6 marks)

[25 marks]

Question 2

- (a) Briefly explain the stages involved in software design? **(5 marks)**
- (b) What are the types of interview that can be adopted regarding a system? **(4 marks)**
- (c) Architectural models are used to document an architectural design. What are the components of architectural design? **(6 marks)**

(Total = 15 marks)

Question 3

- 3(a) Draw and label Waterfall Model (7 marks)
- (b) Outline four problems of Waterfall Model (4 marks)
- (c) Outline four (4) attributes of a good software (4 marks)

(Total = 15 marks)

Question 4

4a. Define fault – free software development and outline any three key factors to be considered in developing a fault-free software (7 marks)

4b. Enumerate and explain the stages (activities) in a software process (8 marks)

(Total = 15 marks)

Question 5

5a. Outline and describe the stages in software testing (4 marks)

Testing Stages

5b. Explain three different model types in software development (6 marks)

5 c. List any five phases of software design (5 marks)

(Total = 15 marks)

Question 6

6 (a) Describe Software Prototyping and outline stages (6 marks)

6(b) Identify and explain at least 2 architectural models. (4 marks)

6 (c) Discuss the Unified Modelling Language (UML) with examples (5 marks)

(Total = 15 marks)