



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS**  
**MARCH/APRIL 2016 EXAMINATION**

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**COURSE CODE:** CIT703  
**COURSE TITLE:** Information Technology and Software Development

**Time Allowed:** 3 Hours **Course Unit:** 3

**Instruction:** Answer Any Five Questions

1a. In the context of software development, explain the following terms: i) Descriptive model  
ii) Prescriptive model and state what they are used for. 6 marks

b. Outline four of the properties that characterize the evolution of large software systems.  
8 marks

2a. Describe the following concepts

i. Rapid prototyping

ii. Joint application development 8 marks

b. Explain the difference between the two kinds of software production process models.  
6 marks

3a i. Explain what is meant by database model. 4  
½ marks

ii. How is a database model described? 1 ½  
marks

iii. List four different types of database model. 4  
marks

iv. Briefly explain what is meant by a Database Management System (DBMS). 4  
marks

4a. What is a data-flow diagram (DFD)?  
2 marks

b. How can a DFD be used?  
3 marks

- c. Differentiate between a dataflow diagram and a flowchart.  
4 marks
- d. List the five basic constructs used in DFD.  
5 marks
  
- 5a. Differentiate between software validation and software verification.  
5 marks
- b. What does stress analysis in a system involve?  
3 marks
- c. List any three examples of errors targeted by stress tests.  
6 marks
  
- 6a. Describe the Entity-Relationship Model (ERM)  
4 marks
- b. What are diagrams created using this process called?  
2 marks
- c. Mention two uses/applications of ERM.  
4 marks
- d. Explain what is meant by Extreme Programming (XP) .  
4 marks
  
- 7. Outline seven guidelines to good software documentation.  
14marks