NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCE
COMPUTER SCIENCE DEPARTMENT
MAY EXAMINATIONS 2005

SUBJECT: SOFTWARE ENGINEERING CONCEPTS
CODE: SCS1205

INSTRUCTION TO CANDIDATES

Answer any five questions. Paper contains Seven questions.

Time: 3 hours

QUESTION ONE

a)   Explain the term software engineering.   **[2]**
b)   Distinguish roles of a software engineer and an analyst.   **[8]**
c)   List and explain the phases of software life cycle.   **[10]**

QUESTION TWO

a)   Increasing interest is being taken in the use of Rapid Application
     Development (RAD). Why is this?   **[12]**

b)   What are the risks associated with the RAD method?   **[8]**

QUESTION THREE

a)   If a software design is not a program [and it isn't], then what is it? **[5]**

b)   Briefly describe five stages used in the formulation and description of a
     software design.   **[10]**

c)   Who should perform the validation test – the user or the developer?
     Justify your answer.   **[5]**

QUESTION FOUR

a) You have taken a job with MASASA Pvt Ltd, a software user who contracted your previous employer to develop a system for them. You discover that MASASA Pvt Ltd's interpretation of requirements is different from the interpretation taken by your previous employer. You know that the cost to your current employer will escalate if ambiguities are not resolved; and also you have a responsibility of confidentiality to your previous employer.

Discuss what you should do in such a situation.   **[15]**

b) Describe software architecture.   **[5]**

QUESTION FIVE

a) Explain five possible stages in the program testing process.   **[15]**

b) Why is a highly coupled module difficult to test?   **[5]**

QUESTION SIX

Explain how both the waterfall model of software process model and prototyping model can be accommodated in the spiral process.   **[20]**

QUESTION SEVEN

a) Is unit testing possible or even desirable in all circumstances? Provide an example to justify your answer.   **[10]**

b) Compatibility is an important quality dimension. What must be tested to ensure that compatibility exists?   **[10]**

END OF QUESTION PAPER