

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCE
COMPUTER SCIENCE DEPARTMENT
DECEMBER 2002 EXAMINATIONS

SUBJECT: SOFTWARE ENGINEERING CONCEPTS
CODE: SCS 1205

Instructions to candidate:

1. Answer any five (5) questions

3 HOURS

QUESTION ONE

- a) Define software engineering. [2]
b) Give an outline of the phases of the software development process. [15]
c) How does software engineering differ from other engineering disciplines. [3]

QUESTION TWO

- a) What is a software development model? [2]
b) Compare and contrast the following development models.
1) Waterfall model and Spiral Model. [6]
2) Throw away and Evolutionary Model. [6]
3) Incremental Model and Build and fix Model. [6]

QUESTION THREE

- a) State five characteristics of a project. [5]
b) With the aid of an example demonstrate the difference between the Critical Path Method and the Project Evaluation and review techniques. [15]

QUESTION FOUR

One of the models used to evaluate the cost of a project is the Cocomo model. Briefly explain what is involved in Cocomo. [20]

QUESTION FIVE

- a) State 5 metrics used to measure software Reliability. [5]
- b) Illustrate how each of the metrics are used. [5]
- c) Demonstrate how Statistical Testing is done for measuring software reliability. [10]

QUESTION SIX

Compare and contrast Functional Oriented design and Object oriented design. [20]

QUESTION SEVEN

- a) You are the manager in charge of maintenance in a large software organization. What qualities do you look for when hiring new employees? [10]
- b) What are the maintenance implication for a one-person software production organization? [10]

END OF QUESTION PAPER

GOOD LUCK!