GRETSA UNIVERSITY - THIKA

UNIVERSITY EXAMINATIONS
MAY - AUGUST 2018 SEMESTER

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

COURSE CODE: BSCS 103

COURSE TITLE: SYSTEM ANALYSIS AND DESIGN

DATE: 6 AUGUST 2018   **TIME: 8.00 AM – 11.00 AM**

INSTRUCTIONS TO CANDIDATES

1. SECTION A IS **COMPULSORY.**
2. SECTION B: ANSWER ANY OTHER **THREE** QUESTIONS.
3. **DO NOT** WRITE ANYTHING ON THIS QUESTION PAPER AS IT WILL BE AN EXAM IRREGULARITY.
4. ALL ROUGH WORK SHOULD BE AT THE BACK OF YOUR ANSWER BOOKLET AND CROSSED OUT.

SECTION A: COMPULSORY

Question One

a) What is a system ? Explain characteristics and types of a system   **[5marks]**

b) Explain system development life cycle (SDLC) in detail. How cost/benefit analysis plays an important role in SDLC   **[5marks]**

c) What are the role of a system analyst?   **[5marks]**

d) Why is code review considered a more efficient testing for bug reduction as compared to testing ?   **[5marks]**

e) What is meant by system testing? Explain different types of system testing. **[5marks]**

f) Explain the different ways in which ananalyst gathers requirements from the customer.   **[5marks]**

g) What is a weak entity. Give an example   **[2marks]**

h) What is a program module? What is an advantage of a modular design?   **[4marks]**

i) What is the main difference between analysis and design?   **[4marks]**

SECTION B: ANSWER ANY THREE QUESTIONS

Question Two

a) Briefly describe the Waterfall model of software life-cycle with the help of a suitable schematic diagram. Discuss about its advantages and disadvantages.   **[7 marks]**

b) Give an example project for which Waterfall model is suited and an example project for which it is not suited.   **[5 marks]**

c) What is prototyping? Briefly explain the benefits of prototyping in software development.   **[5 marks]**

d) Distinguish between technical and economical feasibility studies.   **[3 marks]**

Question Three

a) What is meant by cohesion and coupling in design solution ? What is the relation between cohesion and coupling in modular design? Explain it with an example.

          [6marks]

b) Explain the important attributes that a system analyst ought to have?   **[6 marks]**

c) Explain four types of testing   **[8 marks]**

Question Four

a) Discuss concepts of object oriented programming **[6marks]**

b) Show how the following relationships represented in E-R model with suitable examples: **[6 marks]**

    i.   One-to-one

    ii.   One-to many

    iii.   Many-to-many

c) Explain the different Conversion Methods used in software deployment. **[4marks]**

d) User training is a key component of software deployment. Briefly explain some of the training methods available . **[4 marks]**

Question Five

a) Summarize the advantages of using CASE tools in systems analysis and design.

[4marks]

b) Define the commonly used tools for process modelling stating the role they play.

[**6marks**]

c) Using the case study given below construct a context diagram and a level 1 DFD diagram .

Consider a mail order company that distributes CDs and tapes at discount prices to its members. When an order processing clerk receives an order form, she verifies that the sender is a member by checking the MEMBER FILE. If the sender is not a member, the clerk returns the order along with a membership application form. If the customer is a member, the clerk verifies the order item data by checking the ITEM FILE. Then the clerk enters the order data and saves it to the DAIILY ORDERS FILE. At the same time the clerk also prints an invoice and shipping list for each order, which are forwarded to the ORDER FULFILLMENT DEPARTMENT for processing there.

[10marks]