



**TECHNICAL UNIVERSITY OF MOMBASA**  
**INSTITUTE OF COMPUTING AND INFORMATICS**

Select department

**UNIVERSITY EXAMINATION FOR:**

BMCS 14S Y2S2

BSSC 14S Y2S2

BSIT/SEP 2015/ Y1S2

BIT 4206: SYSTEM ANALYSIS AND DESIGN

END OF SEMESTER EXAMINATION

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE: Pick Date May 2016**

**Instructions to Candidates**

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Choose No questions. Attempt Choose instruction.

**Question One [30 Marks]**

- a) Describe the following terms:
  - i. Information system (1 marks)
  - ii. System analysis (1 marks)
  - iii. system architecture (1 marks)
- b) Explain the importance of system study (3 marks)
- c) Briefly explain three types of information systems (3 marks)
- d) Briefly describe four reasons for system request. (2 marks)
- e) Explain three activities carried out in requirements analysis (3 marks)
- f) Distinguish between logical design and physical design (4 marks)
- g) Define the term "System Controls" With suitable examples. (2 marks)
- h) Describe two benefits and limitations of user case diagrams. (4 marks)
- i) Describe the three types of auditing which are commonly used by a system Information auditor. (6 Marks).

**Question Two [20 Marks]**

- a. List and explain the required skills, background and responsibilities of a system Analyst. (7 marks)

- b. During preliminary investigation, a systems analyst typically follows a series of steps depending on the nature of the request, the size of the project and the degree of urgency. List and explain the importance of every step. (13 marks)

**Question Three [20 Marks]**

- a. Explain the main activities in systems analysis phase (6 marks)
- b. Rapid application development (RAD) consists of four phases, list and explain the objective of each phase (8 marks)
- c. As a professional systems analyst you are required to design a data flow diagram (DFD) for exam grading system. (6 marks)

**Question Four [20 Marks]**

- a. Good report design, requires effort and attention to detail, what relevant topics should you consider in order produce a well designed report? (5 marks)
- b. Describe the eight basic principles which are considered by professionals during interface design (8 marks)
- c. Design an input data screen for customer order system, the system generates an order number and logs the current date and time. The user enters a customer ID, if the entry is valid; the system displays the customer name so the user can verify it. The user then enters the item and quantity. Note that the item description, price, total price, sales tax and grand total are retrieved automatically or calculated by the system. (7 marks)

**QUESTION FIVE**

- a) A purchasing department receives a purchase requisition from the stores. The requisition is checked, and an invalid requisition is returned to the stores for correction. An order is made out using a file of approved suppliers, and sent to the appropriate supplier. A copy order is filed. The requisition is filed. When the goods are received, the invoice is compared with the filed copy order, and an invalid invoice is returned to the supplier. Valid invoices are passed to the accounts department for payment, and fulfilled orders are filed.

Draw a DFD for the purchase requisition system. (10 marks)

- b) Briefly describe four characteristics of a system (2 marks)
- c) Explain the following methodologies
- i. Waterfall Model (4 marks)
- ii. White BOX and black BOX test (4 marks)