

Name: \_\_\_\_\_ Index No: \_\_\_\_\_

2920/201  
SYSTEMS ANALYSIS AND DESIGN  
November 2014  
Time: 3 hours

Signature: \_\_\_\_\_

Date: \_\_\_\_\_



THE KENYA NATIONAL EXAMINATIONS COUNCIL  
DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY  
MODULE II  
SYSTEMS ANALYSIS AND DESIGN  
3 hours

**INSTRUCTIONS TO CANDIDATES**

*Write your name and index number on the question paper in the spaces provided above.*

*Sign and write the date of examination in the spaces provided above.*

*Answer any FIVE of the following EIGHT questions in the spaces provided in this paper.*

*ALL questions carry equal marks.*

*Candidates should answer the questions in English*

**For Examiner's Use Only**

Question	1	2	3	4	5	6	7	8	Total Score
Candidate's Score									

This paper consists of 18 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

1. (a) (i) Define the term *normalization* as used in systems analysis. (2 marks)

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- (ii) Henry a systems analyst recommended to a project steering committee the use of CASE tools in creating and maintaining entity relationship models. Explain **three** benefits that the committee would achieve from using this approach. (6 marks)

- (b) (i) Outline **two** typical components of an information system. (2 marks)

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- (ii) Differentiate between Yourdon and SSADAM systems design methods.  
(4 marks)

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- (c) Explain each of the following terms as used in systems analysis and design:  
(i) coupling; (2 marks)

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- (ii) cohesion; (2 marks)

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- (iii) structured walkthrough. (2 marks)

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2. (a) State **four** qualities of a good system design. (2 marks)

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- (b) An insurance company has the following bonus policy in place for their customers.  
Females less than 40 years get a bonus of 7.5% while those who are 40 years and above  
get a bonus of 13%.  
Males who are 20 – 35 years get a 5% bonus and those over 35 years get a 15 % bonus,  
while those less than 20 years get no bonus.

Draw a decision tree to represent this information.

(6 marks)

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- (c) (i) The management of a certain organisation has decided to base all its future  
system development on a structured methodology. As a systems consultant, they  
have approached you for advice on the one they should select from the several  
options available. Explain **three** criteria that you would consider in making the  
selection.

(6 marks)

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- (ii) Suppose you recommended JSD methodology, justify this choice giving **three** reasons. (6 marks)

3. (a) (i) Outline **four** features that a system analyst should consider while designing a user interface for a new system. (4 marks)

- (ii) Assume you are the ICT project manager in a certain company, outline **two** limitations that would occur during system design. (2 marks)

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- (b) Describe each of the following types of testing as used in information systems;
- (i) systems testing; (3 marks)

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- (ii) acceptance testing. (3 marks)

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- (c) Many organisations undertake a feasibility study before taking the decision to commit a full- scale system development. Outline the contents of the feasibility report. (8 marks)

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4. (a) (i) Define the term *prototyping* as used in systems development. (2 marks)

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- (ii) Outline **two** advantages of using prototyping in systems development. (2 marks)

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- (b) The management of Super Software Ltd has expressed concerns about the length of time spent in activities involved in development of a new system. Assume you are the project manager, explain **four** causes of such delay. (8 marks)

- (c) An incorrectly designed system can lead to intangible costs that cannot be easily quantified. Explain **two** such costs. (4 marks)

- (d) Differentiate between *syntax errors* and *logical errors* as used in systems development. (4 marks)

5. (a) Explain **three** types of documents that could be provided as part of system documentation at the completion of system development. (6 marks)

