



MURANGA UNIVERSITY COLLEGE

(A constituent College of Jomo Kenyatta University of Agriculture & Technology)

MAIN CAMPUS

SUPPLEMENTARY UNIVERSITY EXAMINATIONS

2015/2016 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER

**FOR THE DEGREE
OF
BACHELOR OF BUSINESS INFORMATION TECHNOLOGY**

COURSE CODE: ICS2210
SUPPLEMENTARY AND SPECIAL EXAM

COURSE TITLE: SYSTEMS ANALYSIS AND DESIGN

DATE: _____ **TIME: 2 Hours**

INSTRUCTIONS TO CANDIDATES

Question ONE (1) is compulsory
Answer TWO(2) other questions

MRUC observes ZERO tolerance to examination irregularities

This Paper Consists of 3 Printed Pages. Please Turn Over. ►

Question one

a) Describe the 4 responsibilities of a system analyst during information systems analysis and design.

4 marks

bi) Briefly describe the following methods of fact finding in the context of systems analysis and design.

3 marks

I. Interviews

II. Questionnaires

III. Observation

ii) State the situation where each of the above methods is **most** appropriate. 3 marks

iii) List three advantages and three disadvantages of the interview fact finding technique. 6 marks

Interviews

c) Home owner's insurance depends on the type of policy and location of the home, but once this is determined, there are other factors that increase or decrease the premium to the home owner. One factor is the construction. A brick home will save the home owner 10% in annual premium and if there is a burglar alarm 5% will be deducted from the premium beyond that. There are choices that home owners make that will increase the premium too. If the home owner wishes to be paid, the replacement rather than depreciated value, add 10% to the base. The home owner may choose to carry a \$100 deductible, instead of a \$250 deductible which will increase the premium by 15%. Note, base is the original premium based on amount the house is insured for and the location of the home. Design the structured English statements of the episode.

10marks

d) With an example for each, differentiate the following terms as used in entity modeling. 4 marks

Question two

a) Describe fully the main contents of a problem specification.

12 marks

b) When an invoice is received from a supplier, it is checked against a file of authorized purchases. If the invoice does not match an authorized purchase, then a querying letter is prepared and returned back with the invoice to the supplier. If the invoice matches an authorized purchase, but is for an incorrect amount, then a standard form is completed and returned together with invoice to the supplier. If the invoice reconciles, a payment authorization is made out. A cheque is then prepared and sent to the supplier, and the invoice and the authorization are filed. Draw a level one DFD for the above scenario.

8 marks

Question three

a) A student who passes the examinations and completes the course work and project satisfactorily is awarded a pass. If the course work and the project are unsatisfactory, the student is asked to resubmit the unsatisfactory work, as long as the exams have been passed. A student who fails the examinations is deemed to have failed the whole course unless both the course work and the project are satisfactory, in which case the student is allowed to re-sit the examinations. Prepare a decision table of the scenario.

8 marks

Solution

	1	2	3	4	5	6	7	8
Exams passed?	Y	Y	Y	Y	N	N	N	N
Course work passed?	Y	Y	N	N	Y	Y	N	N
Project passed?	Y	N	Y	N	Y	N	Y	N
Pass	X							
Resubmit course work			X	X				
Re-sit					X			
Fail						X	X	X
Resubmit project		X		X				

b) With examples, differentiate between the following structured English constructs; 6 marks

- i) Sequence
- ii) Selection (condition)
- iii) Iteration Structure

ci) Define system modeling with respect to information system design. 2 marks

ii) Differentiate between process modeling and data modeling. 4 marks

Question four

ai) Describe the advantages of Normalization in data modeling. 6 marks

ii) Outline disadvantages of Normalization in data modeling. 4 marks

bi) Describe four principles of structured methods. 4 marks

ii) Discuss three benefits and three drawbacks of structured methods. 6 marks