Candidate's Signature:

Date of Examination:

2920/201

SYSTEMS ANALYSIS AND DESIGN

July 2012

Time: 3 hours

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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 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 spaces provided.

All questions carry equal marks

For Official Use Only

Question	1	2	3	4	5	6	7	8
Marks								

TOTAL MARKS

This paper consists of 11 printed pages.

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

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Turn over

4.	(a)	(1)	Outline two components of an information system.	(2 marks)
			D Technology Drawical property contact a Kantaka for	
			2) HOVOLUBER 5/ PERMO	*****************
			7) Software - productor 1	
			4.54-	
		(ii)	Outline two roles of a system designer in an organization.	(2 marks)
		11.10	outine the roles of a spicen designer in an organization.	(z marks)
	24.5	122		
	(b)	(1)	State four indicators of an information system that is about to be obsol-	cte()
			othe System's maintenance in stro indicates that orchad to	(2 marks)
			es president and a scooper out the mount with	- W. W. W.
			a the testing they are the performance or they be	T. MORING
			2) Hew technique offers and to perform the some or adoption	al function
			amend choose or although me difficult descense to Perfor	
		(ii)	Differentiate between date and information and information	W
		(11)	Differentiate between data and information as used in systems analysis	. (4 marks)

	(c)	Eve	olain one typical characteristic for each of the following categories of syste	A CHENNY
	(0)	LA	and the typical characteristic for each of the following categories of syste	ms:
		(i)	open:	(1 mark)
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			for Garage Spours	
			closed: The my set as the condensation of with	Cwiro-
		(11)	closed; I and recommendation	(1 mark)
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			The same and the same of the Internal	
		(iii)	probabilistic;	(1 mark)
			probabilistic; - 200 cms have go belie between and a second of the secon	all do

		(tan)	determinists - Peter III - Call No.	0 10
		(iv)		(1 mark)
			- Integral Ports Know with code with	

	(d)	Wi	th the aid of an example in each case, describe the following type of questi	ons that could be
9	30.75		d when designing a questionnaire:	The total of
17			a man assemble a quasicumant.	A STATE OF THE STA
		(i)	open;	(3 marks)

7	Y	V	***************************************	
1-			The best rate of the contract	1 8 3

0		(11)	closed.	(3 marks)
9				
,	(a)	(i)	State two types interviews that could be used during fact finding.	(1 mode)
	(4)	(1)	>=	(1 mark)

		(ii)	Differentiate between operational and legal feasibility studies.	(4 marks)
			~	
				14

5	(b)	Each o	of SDLC stage must produce an output. Outline the deliverable for each	ch of the following
6 3		(i)	planning;	(1 mark)
				???????
		(ii)	feasibility dunotes.co.ke	(1 mark)
		(iii)	analysis;	(1 mark)
2				
-				
	- 12	(iv)	design;	(1 mark)
		20.5		(*
		(v)	implementation.	/1 15
		(.)	implementation.	(1 mark)
			,	***************************************
	(c)	Alexan	was required to write a second on too down and of a shall be a Co.	
	(6)	advant	was required to write a report on top down analysis methodology. Ou tages that he is likely to have included in the report.	(4 marks)
1		******		
-		******		
-		STATE OF THE PARTY OF		
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(d)		Company Ltd. intends to use structured method to analyze a proposed inform e systems analyst, explain three factors you could consider before using this	
	3111111	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	************
	33334		
	3*****		

(a)	(i)	List four systems design methods that could be used in system developme	ent. (2 marks)
	*		
	(ii)	Outline three factors that should be considered when choosing system dev	elopment (3 marks)
	(ii)	njethodologies 110 LeS.CO.Ke	
	(ii)	miethodologies. 110 LeS.CO. Ke	(3 marks)
	(11)	njethodologies. NO LES. CO. KE	(3 marks)
(b)		miethodologies. 110 LeS. CO. Ke	(3 marks)
(b)	(ii) (i)	njethodologies. NO LES. CO. KE	(3 marks)
(b)		Differentiate between spiral and waterfall systems development approache	(3 marks) es. (4 marks)
(b)		miethodologies. 110 LeS. CO. Ke	(3 marks) es. (4 marks)
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(b)	(i)	Differentiate between spiral and waterfall systems development approache	(3 marks) es. (4 marks)
(b)	(i)	Differentiate between spiral and waterfall systems development approache	(3 marks) es. (4 marks)

(c) Read the following narrative to answer the question that follows.

Today's Fashion Ltd. is a distributor of various high quality clothes. Customers place orders by emails, telephone, or company's website.

A sales representative who receives customer's order is supposed to verify if the items are in stock and immediately notify the customer. If some of the items are not found on the inventory control book the sales representative is then supposed to update the inventory file.

Once the customer order is verified the item and customer files are updated and an invoice is generated which is then sent to customer for payment.

On receiving the invoice, the customer deposits money to the company's bank account and sends an email to notify the accountant who then updates the payment file and customer file.

After confirmation of payment the company dispatches the items to customer's physical address together with a delivery note. A copy of delivery note is then filed upon a successful delivery.

Draw a Level 1dataflow diagram to model the narrative into a system.

(8 marks)

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	(i)	Explain two lin	THE COLUMN	ojstems de re	opinion	1	
							/
	(ii)	Explain the ten	m iteration	as used in sys	tem developr	ment life cycle.	(2 marks)
(b)	Arc-Se impler	off Ltd. was hire nented informat	d to train er ion system :	nployees of a such that the r	certain organ normal operat	nization on how tions are not dis	to use a newly rupted.
	(i)	Identify the mo					(1 mark)
		- 61	120 0				
	(ii)	Outline four a	dvantages o	the training	method ident	tilled in (1).	(4 marks)
			(11111111111111111111111111111111111111				
(c)	Table	Shows net pro		e Sul Ba	espectively	heunitial cost fo	or the two project
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(e)	was K	shs.180, 000 an	d Kshs. 220,	000 respective Proje Net profit va	espectively to vely. Use it to ct B alue (Ksh.)	heunitial cost fo	or the two project
(c)	was K	shs.180, 000 an	tits for project A alue (Ksh.)	O00 respective Proje	espectively to vely. Use it to ct B alue (Ksh.) 40,000	heunitial cost fo	or the two projec
(e)	was K	shs.180, 000 an	fits for project A alue (Ksh.) 30,000 35,000	Proje Net profit vi	espectively, welly. Use it to	heunitial cost fo	or the two project
(e)	was K	shs.180, 000 an	fits for project A alue (Ksh.) 30,000 35,000 40,000	Proje Net profit vi	ct B lue (Ksh.) 40,000 46,000	heunitial cost fo	or the two project
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(e)	Yea 1 2 3 (4 5 Tota Table	Shows net proshs. 180, 000 and Proje Net profit via 2,000 and 15,000 and 15,0	tits for project A alue (Ksh.) 30,000 35,000 40,000 45,000 200,000	Proje Net profit vi	espectively to vely. Use it to vely. Vel	beunitial cost for answer the que	or the two project estions that follo

7		(11)	Calculate the payback time for each project.	(4 marks)
			۵/	
5.	(a)	Outli	ne two types of maintenance that could be applied on an installed system.	(2 marks)
5	(b)		in two factors that should be considered when choosing changeover strate	
		newly	y installed system.	(4 marks)
			Edunotes.co.ke	
		(6)3)4	THURLIOUS COSTO	***************************************

	703	Alan		J. I
	(c)		, a systems analyst with a certain software company, developed several moined into single system.	saules that would
9		(i)	Identify the most appropriate testing strategy that he could use justifyin	g your answer.
			ne-former A	(2 marks)
			congress studies.	
		(ii)	Explain two benefits of using the testing strategy identified in (i).	(4 marks)

-				

	(0)	(0)	documentation for a developed system. Explain two uses of have influenced the instruction.	

		(ii)	Mamboleo Institute of Technology intends to acquire a student' system. Explain ways in which the institute could use to achieve	e the objective.
				(4 marks)
6.	(a)	(i)	Outline two qualities of a good system document.	(2 marks)

		(ii)	Outline three responsibilities of a project manager during syste	
			Edunotes.co.ke	(3 marks)

	40	F . 1		
	(p)	Expla	ain three factors that could be considered when choosing system	(6 marks)
		De	adalo d'assers	D)
	. 5			7

		14101		

	(c)	With	the aid of an example in each case, describe each of the following type of r	elationships:
10		(i)	one-to-one;	(3 marks)
	**			
		(ii)	one-to-many;	(3 marks)

		(iii)	many-to-many.	(3 marks)

7.	(a)	State	four challenges to systems development that are due to emerging trends.	(2 marks)
5		****		
<	(b)	For e	ach of the following cases, identify the most appropriate type of prototypin	g justifying your
		(i)	219	ant
		00.	system user request to see how the final system with look after development	(2 marks)
		(ii)	system user request to be able to use system model while it is being deve	aloned :
+		()	System and request to be able to use system model while it is being devi	(2 marks)
	-			
		(iii)	system developer intends to design models of the proposed system.	(2 marks)

(c) Table 2 shows activities and durations for a proposed system project. Use the answer the management of the project of t

	Activity	Predecessor	Duration
Α.	Conduct interview		3
В.	Administer questionnaire	A	4
C.	Read company reports	15	4
D.	Analyze dataflow	B,C	8
E.	Introduce prototype	B,C	5
F.	Observe reaction to prototype	E	3
G.	Perform cost benefit analysis	D	3
H.	Prepare proposal	F,G	2
1.	Present proposal	Н	2

Table 2

 Draw a network diagram to represent the project activities. Show the EFT and LST for each activity. (8 marks)

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	(ii)	Determine the critical path of the project.	(2 marks)	

	(iii)	Outline two limitations of using this method in project management.	(2 marks)	
(a)	Outli	ne two strategies that could be used to mitigate project failure.	(2 marks)	
	******	***************************************		

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(b)	Differe	entiate between project scope and project schedule as used in project manage	ement (4 marks)

(c)	Amua	Sacco Ltd, issues loans to its members using the following criteria.	
	A mer	nber would qualify for a loan if he/she has operational FOSA account for the and he/she has never defaulted loan. In addition a member should have three to the proof of reliable monthly income.	
	(i)	Represent this information using a decision tree of the second se	(5 marks)
	(ii)	Outline two limitations of decision tree. CO. Ke	(2 marks)
(d)	(i)	Describe structured english as used in systems design and development.	
	(ii)	Peak Security Company Ltd. is contemplating to recruit guards to be declient's premises. In order for an applicant to be shortlisted he/she should feet tall and weigh at least 60 kilograms. In addition he/she should posse good conduct. Assuming that you are hired as the company's system analyst, draw decision table to represent the recruiting processes.	d be at least 4.3 s a certificate of