



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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UNIVERSITY EXAMINATIONS 2023/2024

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY, BACHELOR OF SCIENCE IN DATA SCIENCE, BACHELOR OF SCIENCE IN COMPUTER TECHNOLOGY, BACHELOR OF SCIENCE IN COMPUTER SCIENCE, BACHELOR OF SCIENCE IN EDUCATION ARTS, BACHELOR OF EDUCATION SCIENCE, BACHELOR OF SCIENCE IN COMPUTER SECURITY AND FORENSICS, BACHELOR OF SCIENCE IN INFORMATION SCIENCE AND BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

AND

SECOND YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF MATHEMATICS AND COMPUTER SCIENCE AND BACHELOR OF SCIENCE IN MATHEMATICS

CIT 3154: SYSTEMS ANALYSIS AND DESIGN

DATE: APRIL 2024

TIME: 2 HOURS

INSTRUCTIONS: Answer Question ONE and any other TWO questions.

QUESTION ONE (30 MARKS)

- The steering committee is formed to oversee the systems development project from its initiation to its completion. Reliance Industries selected you to be a member of a steering committee, describe any six functions you are charged with as a member of the committee.
[6 Marks]
- Rachael works as an analyst in a small- software development firm in Kenya. The firm develops software that manages university admission process. Rachael wants to quickly



MUST is ISO 9001:2015 and



ISO/IEC 27001:2013 CERTIFIED

develop a user interface to demonstrate to a potential client how the final system will appear and function.

- i) Discuss the most appropriate methodology for this kind of development [2 Marks]
 - ii) Outline four principles that can guide Rachael while designing the user interface. [4 Marks]
- c) Sharon graduated from a Kenyan local University in 2010 with a degree in Information Technology (IT) but minimal experience in IT implementations. Her parents have been running a video library at Mumias town and two others at Bungoma. The libraries rent and sell audio CDs, video CDs, DVDs, audio tapes and video tapes as well as story books. Sharon would like to automate the manual libraries, and intends for the project to take not more than three months. Analyze any two possible change-over techniques, giving the merits and demerits, Sharon could use to implement the system at the three sites and select one you consider most appropriate for this project [6 Marks]
- d) United Bank of Kenya CEO has approached you to help him recruit an ICT project manager to help design a Banking ERP system. Briefly explain six traits or skills that the CEO of the Bank will be looking for when appointing the ICT project manager. [6 Marks]
- e) After a system is developed in a particular programming language, it is implemented and used in the organization. Describe six systems implementation phases implied in this sentence. [6 Marks]

QUESTION TWO (20 MARKS)

- a) Despite all the tools and techniques available to project leaders and systems analysts, projects costing large amounts of money may still fail for one reason or another. Briefly explain six reasons for the systems failures. (6 Marks)
- b) Students who have passed both the course work and exam for a Diploma Course are allowed to graduate. They are also issued their Diploma scrolls provided they have completed payment of all fees. Students who have passed their course work only must attend further exam coaching before sitting for the next exam. Those who have passed their exam but not their course work are required to attend a semester of remedial classes. Any student who has not paid his or her fees is issued a warning letter.
You will probably have to read the problem several times to understand it fully. It would even be more difficult to code the program directly. Hence, the use of a decision table is appropriate here. Construct a decision table to represent the description above. [5 Marks]
- c) You are an IT advisor to a JAD team that is studying a new inventory system. The proposed system will provide more information and faster updates, and automatically monitor fast- or slow-moving items. Some controversy exists about whether to use an on-site or off-site location for the JAD sessions.
- i) How would you advise the project leader? [1 Marks]



ii) Who should be on the JAD team, and what would be their roles as team members?
[4 Marks]

d) The accuracy and quality of systems is often assessed during 'Structured walkthroughs'. Outline four advantages of 'Structured Walkthroughs' in system development. [4 Marks]

QUESTION THREE (20 MARKS)

a) Once you have decided to purchase off-the-shelf software rather than write some or all of the software for your new system, a system developer should consider certain factors when deciding which software to buy from a vendor. Identify six factors to consider when choosing suitable computer software to acquire. [6 Marks]

b) In recent years, Computer Aided Software Engineering (CASE) tools have emerged as ways of developing information systems. As a systems analyst appointed to investigate the possibility of acquiring a CASE tool to be used in conjunction with an existing structured approach, explain to senior management why such a tool is needed. [4 Marks]

c) Organizations can acquire software for use in their operations in different ways. One such software acquisition method is end user computing (EUC). Explain two advantages and two disadvantages of end user computing (EUC) over other software acquisition methods [4 Marks]

d) Agricultural Finance Corporation (AFC) uses internet and an electronic commerce website to connect to its customers and suppliers, and to capture data and share information about sales orders and purchases. Videoconferencing and electronic mail services are also provided. Data generated in the firm are captured by sensors and processed by a computer that also suggests answers to complex processing problems posed by a plant engineer. Managers and business professionals access reports on a periodic, exception, and demand basis, and use computers to interactively assess the possible results of alternative decisions.
Required;
Describe any three information systems being used at the Agricultural Finance Corporation (AFC) [6 Marks]

QUESTION FOUR (20 MARKS)

a) *'However well users are satisfied or efficient the processing is, a system cannot be considered adequate unless it is documented to a very high standard'*. Briefly describe six reasons why much emphasis is placed on high quality documentation. [6 Marks]

b) Effective project management involves identifying risks in advance and then developing strategies either to reduce or remove the risks. Identify four possible sources of risk. [4 Marks]



- c) SSADM has a number of advantages over other approaches to systems development. Outline four advantages of SSADM. [4 Marks]
- d) Distinguish between the following terms relating to information systems [6 Marks]
- i) Expert systems and Decision support systems
 - ii) Dynamic system and adaptive system

QUESTION FIVE (20 MARKS)

- a) Contrary to the general belief, people do not resist technological change, but social changes. For Management Information Systems to be accepted, people must see in it the features that support their social change and psychological needs. With these understanding, explain six causes of resistance among employees [6 Marks]
- b) Some of the tasks involved in system implementation include training, testing and file conversion. What are the objectives of user training? [4 Marks]
- c) A consultant has identified a number of activities, their preceding activities and time estimates for a redefinition project (see below). There is an overhead cost of Kshs.2150 per day.

Activity	Preceding Activity	Duration	Cost (Kshs)
A	-	4	1200
B	A	2	650
C	B	10	950
D	A	2	700
E	D	5	455
F	A	2	1285
G	F	4	1450
H	G	3	1200
I	C	6	740
J	C, E	6	930
K	H	3	7400

- i) Draw a network chart for this project; [4 Marks]
- ii) Identify the critical path; [1 Marks]
- iii) State the estimated duration of the project; [1 Marks]
- iv) If the activity E overruns by 4 days, what effect does it have on the duration of the project? [2 Marks]
- v) Compute the total cost of the project [2 Marks]

