



CICT PART II SECTION 3
SYSTEMS ANALYSIS AND DESIGN

WEDNESDAY: 1 September 2021.

Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question.

QUESTION ONE

- (a) Describe four characteristics of throwaway prototyping. (4 marks)
- (b) Models are used in many different ways in the information system development process.
- (i) Highlight four reasons of using models in the development of software system. (4 marks)
- (ii) Examine four factors that you would consider when choosing a modelling language. (4 marks)
- (c) User documentation is designed to assist end users to use a new information system.
Highlight eight items that should be included in a user documentation. (8 marks)

(Total: 20 marks)

QUESTION TWO

- (a) Top-Down strategy uses the modular approach to develop the design of a system.
With reference to the above statement, outline four benefits of modularisation. (4 marks)
- (b) A trainee systems analyst is seeking guidance on how to design a test case.
Examine four guidelines in designing test cases. (4 marks)
- (c) In tabular form, contrast hard systems thinking from soft systems thinking. (6 marks)
- (d) Highlight six reasons why a new system might not meet system user requirements. (6 marks)

(Total: 20 marks)

QUESTION THREE

- (a) Successful requirements gathering is both an art and a science. However, there are some general steps you could take to keep this all-important aspect of your project on the right path.
Elaborate six guidelines for successful requirements gathering. (6 marks)
- (b) Gap analysis is used to compare between the actual performance against the planned performance of an information systems project. Basically, it helps you find solutions to issues that are holding you back from growing as an organisation.
Explain how you could perform a SWOT analysis for a planned information system's project. (4 marks)
- (c) In the analysis phase, the system analyst works extensively with the business users of a new system.
Enumerate the three basic process steps that the analyst might engage in. (6 marks)
- (d) A system project may be dropped at any time prior to implementation. However, it becomes more difficult and costly to drop a project when it goes past the design phase.
Citing four reasons explain why projects are dropped. (4 marks)

(Total: 20 marks)

QUESTION FOUR

- (a) During systems design, we often build models or we reverse-engineer them from an existing system.
Citing four reasons, justify the need to build these models. (4 marks)
- (b) The ATM machines of XYZ Bank contain biometric security features besides conventional PIN control. The customers of XYZ Bank have a choice either to use a card and a PIN or a card and a biometric option. Customers of other banks can also withdraw cash from the ATMs of XYZ Banks. However, they can only use a card and a PIN option. A customer card is captured by the machine after three consecutive attempts.
Required:
Draw a program flowchart showing the process of cash withdrawal from XYZ Bank’s ATM. Assume that transactions other than cash withdrawals are not allowed. (10 marks)
- (c) Training end users on how to use a new system can help eliminate any doubts, misunderstandings and unnecessary errors and problems.
Propose three methods of user training that could be used. (6 marks)
- (Total: 20 marks)**

QUESTION FIVE

Assessment within the workplace, prior to, during, and at the conclusion of a project is an important professional activity and an essential way in which the process of evaluation can provide a firmer basis from which to work.

Required:

- (a) (i) Explain the importance of clearly defining a project before commencement. (2 marks)
- (ii) Assess the implication of suggesting a solution before a problem is clearly clarified. (2 marks)
- (iii) Explain the implications if too much information which has to be assessed is acquired before commencement of the project. (4 marks)
- (b) After a project has been assessed, review and evaluation is normally undertaken by a team of information systems (IS) professionals.
Discuss four lessons that could be learnt by a team from the evaluation process. (4 marks)
- (c) Describe the effects that burnout could have on the IS professional at any stage of project execution. (4 marks)
- (d) As an IS professional, explain how “reflexive practice” will ensure continuous professional development. (4 marks)
- (Total: 20 marks)**
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