kasneb

CICT PART II SECTION 3

SYSTEMS ANALYSIS AND DESIGN

THURSDAY: 26 November 2020. **Time Allowed: 3 hours.**

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

QUESTION ONE

(a) (i) Formulate four questions answered during the analysis phase in systems development. (4 marks)

(ii) Highlight two activities undertaken by the project team during the analysis phase. (2 marks)

(iii) Examine three steps taken during system development analysis phase. (6 marks)

(b) (i) Describe the meaning of the term "methodology" in the context of information systems development. (2 marks)

(ii) Giving an example in each case, examine three ways of categorising methodologies. (6 marks)

(Total: 20 marks)

QUESTION TWO

(a) Duo-LINK Company is located in Kakamega town. It has a simplified purchasing and inventory track system that works as follows:

The raw material inventory informs the purchasing department when stock falls below the re-order point.

The purchasing department issues a purchase order to relevant suppliers.

On arrival, goods and invoices are directed to the receiving department where they are recorded and the packaging slip is verified against a copy of the purchase order.

At the end of the month, the billing department checks to make sure that all adequate documentation is done and produces a payment voucher. The payment voucher is processed by a cash disbursement clerk, who then prepares a cheque for the senior accountant's signature. The cheque is forwarded to the suppliers destination by the accounts office.

Required:

Draw a level 1 data flow diagram to represent the above scenario. (8 marks)

(b) Describe throwaway prototyping based methodologies in the context of systems development. (2 marks)

(c) Evaluate four challenges of implementing a tightly coupled information system. (4 marks)

(d) Examine three roles of each of the following personnels in information systems project:

(i) Change management analyst. (3 marks)

(ii) Business analyst. (3 marks)

(Total: 20 marks)

QUESTION THREE

(a) (i) Describe the term workflow in the context of systems development life cycle (SDLC). (2 marks)

(ii) Explain the purpose of testing workflow. (2 marks)

(b) (i) Explain the purpose of economic feasibility in systems development. (2 marks)

(ii) Enumerate at least six steps involved during economic feasibility. (6 marks)

(c) Describe two examples of standards under each of the following categories:

(i) Documentation standards. (2 marks)

(ii) Coding standards. (2 marks)

(iii) Procedure standards. (2 marks)

(iv) User interface design standards. (2 marks)

(Total: 20 marks)

QUESTION FOUR

A customer is considered for a discount if and only if the customer is regular. A purchase limit of at least Ksh.10,000 plus an advance payment in full, qualifies a customer for 10% discount.

If only one but not both of these conditions is met, then the customer qualifies for only 5% discount. All other cases attract no discount.

Required:

(a) Citing an example, identify problems with the narrative expression for the customer discount criteria. (2 marks)

(b) Express the customer discount criteria using the following:

(i) Flow Chart. (3 marks)

(ii) Decision Tree. (3 marks)

(iii) Limited Entry Decision Table. (3 marks)

(iv) Pseudo Code. (3 marks)

(c) (i) Define Root Definition in the context of soft system methodology (SSM). (2 marks)

(ii) Provide a general format for writing root definition. (2 marks)

(d) Distinguish between structural testing and functional testing in the context of information systems. (2 marks)

(Total: 20 marks)

QUESTION FIVE

(a) Achieving optimal system integration is a challenge many IT managers often face in their companies.

Discuss five ways you could use to overcome system integration challenges. (5 marks)

(b) Describe the purpose of the following CASE tools:

(i) Upper case tools. (1 mark)

(ii) Lower case tools. (1 mark)

(iii) Integrated case tools. (1 mark)

(c) A sales order process is conducted as listed in the following steps:

1. Customer browses catalog and selects items to buy.
2. Customer goes to check out.
3. Customer fills in shipping information (address, next-day or 3-day delivery).
4. System presents full pricing information.
5. Customer fills in credit card information.
6. Credit card company authorise credit card purchase.
7. System confirms sale immediately.
8. Credit card company process credit card payment.
9. System sends confirmation email to customer.

Required:

Draw a UML use case diagram for the above scenario. (12 marks)

(Total: 20 marks)

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