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(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

UNIVERSITY SPECIAL/SUPPLEMENTARY EXAMINATIONS

2021/2022 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER EXAMS

FOR THE DEGREE OF

BACHELOR OF COMMERCE

COURSE CODE: BCB418

COURSE TITLE: Business Software Design

DATE: TUESDAY 02/08/2022   **TIME: 8:00A.M-10:00A.M**

INSTRUCTIONS: Please attempt **QUESTION ONE** and any **OTHER TWO QUESTIONS**

1) **Question one [30mks]**
   a) Distinguish between the following concepts
      i) A business process and an event (3mks)
      ii) DFD and ERD (3mks)
      iii) Physical models and logical models (3mks)
      iv) Strategic Information and Information Strategy (3mks)
   b) Information is considered a strategic resource. Discuss How you can ensure that the strategic goals are factored in software development projects (8mks)
   c) An ERD is an important modelling tool in systems development. Using a suitable diagram, describe the basic elements of an ERD and how they are used in modelling (10mks)

2) **Question two [20mks]**

   An information system (IS) can be any organized combination of components that are used to store, retrieve, process, and disseminate information in an organization.

   a) Using a suitable diagram, Outline the key components that make up an information system (8mks)
   b) Briefly describe the components that make up the information system in Q2a above (12mks)

3) **Question three [20mks]**
   a) Coupling and cohesion describes the relationships between and within Software modules. A good software design has high cohesion and low coupling arrangements.
      i) Distinguish between cohesion and coupling (3mks)
      ii) What are the disadvantages of tight coupling and loose cohesion (7mks)
   b) A business process consists of a network of inter-related activities that convert inputs into an output, where the output is a product or service, valued by a customer.
      i) Distinguish between primary processes and support processes (3mks)
      ii) Describe the role of Information Systems in both primary and support processes (7mks)

4) **Question four [20mks]**
   You have been hired as an Information Systems Manager for Bidii Enterprises, a FMCG distribution company. Your first assignment is to lead a software development exercise as project manager
   a) What is the relationship between a DFD and a Data dictionary (3mks)
   b) Distinguish between structured design and functional design (3mks)
   c) In phase one of the project, you are expected to develop a system to manage transactions with your customers.
      i) Develop a data dictionary for the customers with at least 5 entries (4mks)
      ii) Draw an ERD for the customers and the commodities they buy (4mks)
      iii) Draw a level 1 DFD to model a transaction between the customer and the business (6mks)

5) **Question five [20mks]**
   a) Write some short notes on the following concepts
      i) Software concurrency (4mks)
      ii) Software modules (4mks)
      iii) Context diagram (4mks)

iv) Object oriented software design (4mks)

v) Dashboard (4mks)