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KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR
FIRST YEAR, SECOND SEMESTER EXAMINATION
FOR THE DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
DIT 1005 – SYSTEM ANALYSIS AND DESIGN

Date: 14TH DECEMBER 2022
Time: 11:30AM – 1:30PM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) State two skills expected of a system analyst (2 Marks)
- b) Mention the three main stages in decision making and identify at least one information system that can support each stage (6 Marks)
- c) Outline the five main activities of system development and implementation phase, properly shown the chronological flow of those activities in SDLC. (5 Marks)
- d) Explain the following terms as applied in system development
 - i) Subsystem (1 Marks)
 - ii) Functional decomposition (1 Marks)
 - iii) Prototype (1 Marks)
- e) Explain four characteristics of a good software design (4 Marks)
- f) Explain any three types of feasibility that can be done during system development. (3 Marks)
- g) Highlight three characteristics of structured methods (3 Marks)
- h) Describe four factors that guide a system designer when designing the user interface for a particular application (4 Marks)

QUESTION TWO (20 MARKS)

- a) Discuss and justify which of the two development approaches, Agile or waterfall model, you would recommend for each of the following situations
 - i) A vehicle assembling company which requires an automated assembly line (4 Marks)
 - ii) A milk processing plant that receives, pasteurizes and packages milk through batch processing (4 Marks)
- b) Outline Four situations where waterfall model would be most appropriate (4 Marks)
- c) ABC Company are considering developing a new system to automate their ordering system. They are considering to use prototyping. Describe any three types of software prototypes that they could consider (6 Marks)
- d) Explain two characteristics that could define a quality system (2 Marks)

QUESTION THREE (20 MARKS)

- a) Explain three functions of CASE tools (6 Marks)
- b) Design a flowchart based on the following scenario. The program prompts the user to enter his/her name and age and determine whether the user is an adult or not. If he/she is below 21 years old, the user would be a teenager else he/she would be an adult. The user would be prompted after each person, if he/she wishes to enter any more name, the program continues to run until the user enters "NO or "N" (6 Marks)
- c) Discuss the four reports produced by management information systems (4 Marks)
- d) Describe the following system principles
 - i) Inter-relatedness and interdependence of components (2 Marks)
 - ii) System feedback and control (2 Marks)

QUESTION FOUR (20 MARKS)

- a) During development of Meru University Library System, there were many rules documented, that is a procedure for becoming a member of library, rule for issuing books etc. The membership rule stated "Anyone whose age is 18 or more than that can become a member of library. There are two types of memberships depending upon the duration of membership. First is for 6 months and other is for 1 year 6 months membership fee is ksh 1000 and 1 year membership fee is Ksh 1500".
 - i) Draw a decision tree for the membership rule (8 Marks)
 - ii) Draw a decision table for the membership rule. (8Marks)
- b) Structured walkthrough is one of the quality assurance techniques used during system development. Explain the role of each of the Four main people involved in the exercise. (4 Marks)