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KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR
THIRD YEAR, SECOND SEMESTER EXAMINATION
FOR THE BACHELOR OF SCIENCE IN COMPUTER SCIENCE

KCS 307- OBJECT ORIENTED ANALYSIS AND DESIGN

Date: 09TH DECEMBER 2022
Time: 2:30PM – 4:30PM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) What are the main underlying causes of problems in information system development?
(5 Marks)
- b) By use of a well-drawn diagram describe how waterfall model methodology of developing systems works.
(10 Marks)
- c) Describe where the above model, (water fall) is applied.
(5 Marks)
- d) Explain different things that the system analyst needs to capture and document during system investigation and survey.
(5 Marks)
- e) Describe three techniques of fact finding in system analysis phase.
(5 Marks)

QUESTION TWO (20 MARKS)

- a) What is the UML? Describe the history of UML
(5 Marks)
- b) Discuss the aim and Importance of Modeling
(5 Marks)
- c) List the relationships in structural modelling.
(5 Marks)
- d) Where can the UML Be Used?
(5 Marks)

QUESTION THREE (20 MARKS)

- a) Draw a UML class diagram and illustrate its attributes and methods
(5 Marks)
- b) With a clear diagram, illustrate subsystems and super-systems of Information system.
(6 Marks)
- c) List four quality criteria for good analysis
(4 Marks)
- d) Draw a state machine diagram for Rail road crossing
(5 Marks)

QUESTION THREE (20 MARKS)

- a) Describe message, encapsulation and inheritance concepts of object oriented programming? (5 Marks)
- b) Describe five quality criteria for good design (5 Marks)
- c) What is a use case? Describe accountant use case diagram in managing staff (5 Marks)
- d) What are the advantages of separating the analysis and design phases of a project? (5 Marks)

QUESTION FOUR (20 MARKS)

- a) Illustrate UML architecture (5 Marks)
- | |
|-----------------|
| Meta-meta model |
| Meta model |
| model |
| User objects |
- b) List the four basic type of elements in UML. (5 Marks)
- c) Draw a deployment diagram in architectural modeling (5 Marks)
- d) Draw a sequence diagram for the cooling soft drink (5 Marks)

QUESTION FIVE (20 MARKS)

- a) Briefly explain what is meant by object-oriented approach to systems development. (2 Marks)
- b) Differentiate between object-oriented analysis and object-oriented design (6 Marks)
- c) Explain any four reasons for investigating an existing system before developing a new one. (4 Marks)
- d) Outline any FOUR characteristics of object-oriented systems (8 Marks)