



COVENANT UNIVERSITY

CANAANLAND, KM 10, IDIROKO ROAD
P.M.B 1023, OTA, OGUN STATE, NIGERIA.

16C4002451

TITLE OF EXAMINATION: B.SC EXAMINATION

COLLEGE: SCIENCE AND TECHNOLOGY

DEPARTMENT: COMPUTER AND INFORMATION SCIENCES

SESSION: 2018/2019

COURSE CODE: CSC317

COURSE TITLE: SYSTEM ANALYSIS AND DESIGN

INSTRUCTION: Answer ANY three (3) Questions

SEMESTER: ALPHA

CREDIT UNIT: 2

TIME: 2 HOURS

1. (a) What is System Development Life Cycle (SDLC)? Discuss briefly the major phases in the System Development Life cycle and identify the deliverables in each phase. (9 marks)
(b) You are to develop a sales management system that allows sales representative to record orders placed by customers, checkout orders, and also allows the store keeper to keep inventory of product in the warehouse. A customer can place more than one order however each order must be placed by one customer. Each sales representative serves zero to many customers per time, however each customer is served by only one sales representative. Each order contains one or more products and zero or more products are stores in only one warehouse.
i) Draw an entity relationship diagram for this scenario. (5 marks)
ii) Sketch a Use Case diagram to depict sales representative and store keeper functions [NOTE: recording order includes updating order, and checkout extends edit order details. Keep inventory includes update products details.] (5 marks)
iii) Draw a sequence diagram for the sales representative's interaction with the system given that a customer's order can have up to 12 products. (4.5 marks)
2. (a) Patients call or come to the hospital to make new appointments as well as change or cancel appointments. Check to make sure the patient is a current patient and has no unpaid bills. If this is a new patient, perform "Add patient" before continuing. If the patient has unpaid bills, forward the call or patient to the account's office. If it is a change or cancellation, find the current appointment in the appointment file and cancel it. Match the patient's desired appointment times with available dates and times and schedule new appointment. Draw Process 0 and Level 1 Data Flow Diagrams. (10 marks)
(b) Identify and illustrate the elements of a Process modelling tool. (6 marks)
(c) Distinguish between tools, technique and methodologies with relevant examples. (7.5 marks)
3. (a) XYZ motors has hired your company to develop an information system for its operations. XYZ motors desires speedy delivery of the system and active users engagement in the development process. As the head of the project team:
i) Discuss three (3) fact finding methods you intend to use in gathering requirement for the proposed system. (7.5 marks)

Actors: Sales rep, Customer, Store keeper, Interviewer, Sales rep, New order
Observation, Research, Questionnaire

- (5 marks)
- (b) You are to choose between Water fall and Prototyping as the development methodology for the proposed system. State the methodology of your choice with reasons. Give a schematic view of the methodology and state its advantages and disadvantages. (8 marks)
- (c) Briefly describe how to alleviate the problems in system development (3 marks)

1. (a) A System analyst is a problem solver. Explain your answer with tangible reasons. (5 marks)
- (b) As the head of an interview panel to recruit system analyst for your company, explain in detail three (3) skills you will be looking for in the successful candidate. (9 marks)
- (c) Draw the Class diagram showing the Relationships and Multiplicities for the following analysis information of hospital management system

- A Patient is made-up of one Patient Details (Patient details is PId, Name, Age, gender)
- A Patient can either be a New Patient or an Old Patient.
- A Ward can be accommodated by at least 8 Patients per time.
- A Ward is made-up of one Ward Details (Ward details is WardNo., No_of_Bed, WType).
- A Convenience Room is part of a Ward.
- A Ward has at least two Nurses attached to it per time. (5 marks)

- (d) Briefly describe the following Object-Oriented Design concepts with relevant examples: (4.5 marks)

i) Polymorphism, ii) Inheritance, iii) Composition and iv) Aggregation

5. (a) Describe elements of Entity Relationship Diagram. (7.5 Marks)

- (b) With illustrations, describe the Martins ERD Notation style. (6 marks)

- (c) KHMS schools have one or more annexe. Each annexe may have one or more teachers, but a teacher is assigned to only one annexe. Each teacher may coordinate one or more classes but each class is coordinated by only one teacher. Also each teacher may submit one or more class assessment but each assessment is submitted by only one teacher. Each class may have many assessments and an assessment may be for more than one class. Create an ERD for this narrative. (10 marks)

Entity

Annexe

Teacher

Class

Class assessment

Entity

Attributes

Relationships

Relationship

+

+

(0,1)

(1,1)

(0,1)