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**GARISSA UNIVERSITY**

**UNIVERSITY EXAMINATION 2018/2019 ACADEMIC YEAR TWO**

**SECOND SEMESTER EXAMINATION**

**SCHOOL OF INFORMATION SCIENCE AND TECHNOLOGY**

**FOR THE DEGREE OF BACHELOR OF INFORMATION SCIENCE**

**COURSE CODE: INS 201**

**COURSE TITLE: SYSTEM ANALYSIS AND DESIGN**

**EXAMINATION DURATION: 2 HOURS**

**DATE: 14/02/2020 TIME: 2.00-4.00 PM**

**INSTRUCTION TO CANDIDATES**

* **The examination has FIVE (5) questions**
* **Question ONE (1) is COMPULSORY**
* **Choose any other TWO (2) questions from the remaining FOUR (4) questions**
* **Use sketch diagrams to illustrate your answer whenever necessary**
* **Do not carry mobile phones or any other written materials in examination room**
* **Do not write on this paper**

**This paper consists of TWO (2) printed pages *please turn over***

**QUESTION ONE (COMPULSORY)**

Garissa University has contracted XYZ Company to develop a procurement management system to help improve their service deliver. As a software engineering professional

1. Explain five reasons for automating their operations **(5 marks)**
2. Explain three roles of each of the following personnels
   * 1. Data base administrator **(2 marks)**
     2. System analyst **(2 marks)**
     3. System programmers **(2 marks)**
3. Explain four reasons of training the users and the techniques that can be used **(8 marks)**
4. Explain the objectives of conducting a system audit **(6 marks)**
5. Explain FIVE characteristics of a good information system. **(5 marks)**

**QUESTION TWO**

The library activities are manual and to improve the efficiency in service delivery library management system is proposed.

1. Explain the techniques they can use to collect user requirements **(6 marks)**
2. Explain three types of system conversion from current to proposed system they can adopt. (6marks)
3. Waterfall is one of the process model that can be applied in developing the system. Explain the major activities in waterfall model **(8 marks)**

**QUESTION THREE**

1. Explain Data Modeling and Data Flow Diagram **(4 marks)**
2. Explain the various types of testing performed in systems **(6 marks)**
3. A Railway reservation system functions as follows: The passenger fills in a reservation form giving his/her particulars and source and destination details. The counter clerk ensures whether seats is available or not from the reservation register. if seat is not available, the form is returned back to the passenger. Otherwise the clerk will prepare the tickets, compute the charges for the tickets and a booking statement is composed. One copy of the booking statement is retained as office copy, one is given to the train conductor and one copy is pasted on the compartment. A cash statement is prepared at the end of each shift. Prepare a context diagram and data flow diagram for the above case **(10 marks)**

**QUESTION FOUR**

1. Explain the various types of system testing **(6 marks)**
2. Explain the roles of the following teams in software development
   1. management **(2 marks)**
   2. Quality assurance **(2 marks)**
   3. Technical team **(2 marks)**
3. A technical support company writes a decision table to diagnose printer problems based upon symptoms described to them over the phone from their clients. The symptoms include Printer does not print, A red light is flashing and Printer is unrecognized. The actions include Check the power cable and Check the printer-computer cable. Develop a decision table.  **(8marks)**

**QUESTION FIVE**

1. Differentiate the following terms **(6 marks)**
   * 1. Open and closed syetem
     2. Probabilistic and deterministic systems
     3. Auditing around a computer and auditing through a computer
2. software documentation is a critical process in the overall software development process
   1. Explain the advantages of providing program documentation **(4 marks)**
   2. Explain two types of progam documentation **(4 marks)**
3. Determine that the user of the ATM is a valid user, and that the user of the ATM has enough money in their account to complete the transaction. Draw a data flow (level 1) diagram to illustrate the logical flow of data and the processes necessary for the transaction. **(6 marks)**