**UNITY UNIVERSITY, ADAMA CAMPUS**

**DEPARTMENT OF COMPUTER SCIENCE**

***NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***ID No:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_SECTION:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***DEPARTMENT:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***.***

|  |  |
| --- | --- |
| ***COURSE TITLE*** | ***STRUCTURED SYSTEM ANALYSIS AND DESIGN*** |
| ***COURSE CODE*** | ***MGMT 421*** |
| ***Max. Point*** | ***50*** |
| ***Max. Time Allotted*** | ***1:30 hrs*** |
| ***MGMT 421 (SSAD) FINAL EXAMINATION*** | |

***INSTRUCTION:***

1. ***DO NOT TURN THE PAGE UNTIL YOU ARE TOLD TO SO***
2. MAKE SURE THAT YOUR QUESTION PAPER CONTAINS 6 PAGES INCLUDING COVER PAGE
3. READ ALL THE QUESTIONS CAREFULLY AND ATTEMPT ALL OF THE QUESTIONS ACCORDINGLY
4. USE THE SEPARATE ANSWERSHET PROVIDED FOR THE 1**ST,** 2**ND** AND 3RD PART OF YOUR QUESTION PAPER AND THE BLANK PAPER ATTACHED TO YOUR QUESTION FOR THE LAST PART OF THE QUESTION.
5. USING PENCIL, RED PEN AND GIVING ANSWER ON THE QUESTION PAPER IS STRICTLY FORBIDDEN
6. CHEATING AND VIOLATING EXAM RULES MAKES YOUR EXAM INVALID

***Part One: - Write “True” if the statement is correct and “False” if the statement is incorrect (1 point each)***

1. The goal of prototyping is to support requirements determination to develop concrete specifications for the ultimate system, not to build the ultimate system.
2. Conceptual Data modeling involves graphically representing the processes, or actions that capture, manipulate, store and distribute data between a system and its environment and among the components within a system.
3. Finding out more about the problem, formulating alterative solutions, choosing the best alternative, devising a plan for its implementation is one of the analytical skills that every system analyst must require.
4. The DFD (Data Flow Diagram) is an excellent communication tool for analysts to model processes and functional requirements
5. Implementation is the technical specialists who construct, test, and deliver the system into operation
6. Design and Maintenance involves a thorough study of an organization’s current procedures and the information systems used to perform organizational tasks
7. Requirements Structuring involves using models or graphical representations of users’ requirements or the current system
8. Design involves converting the description of the recommended alternative system into logical and then physical design specifications
9. Implementation is the physical specification is turned into a working system; the system is tested and then put to use
10. The BPP (Baseline Project Plan) contains all information collected and analyzed during the project initiation and planning activity

***Part Two: - Choose the correct answer from the given alternatives and write the letter of your choice on the answer sheet provided at the end of the last page of your question paper (1 point each)***

|  |  |
| --- | --- |
| 1. Which of the following techniques used to gather information about the current system or possible improvements to it through the review and analyze existing documentation? | 1. Document Analysis 2. Interview 3. JAD Session 4. Observation 5. Questionnaire |
| 1. Understanding why an information system should be built and determining how the project team will build it is part of the phase of the SDLC | * 1. Analysis   2. System Request   3. Gathering   4. Initiation   5. None of the above |
| 1. The relationships among elements within a module is called: | 1. Modular Coupling 2. Modular Cohesion 3. Modularization 4. Constraint 5. None of the above |
| 1. Which step of SDLC performs cost/benefit analysis? | 1. Analysis phase 2. Design phase 3. Feasibility Study 4. Implementation 5. Maintenance phase |
| 1. Which feasibility determines the availability of team and support staff? | |  |  | | --- | --- | | A) | Economic Feasibility | | B) | Cultural Feasibility | | C) | Technological Feasibility | | D) | Schedule feasibility | | E) | Resource Feasibility | |
| 1. Which of the following is considered as an intangible benefit in the economic feasibility study of system analysis and design? | 1. Staff and personnel cost 2. Decreasing Operating Cost 3. Operational Efficiency 4. Training and Equipment Cost 5. All of the above |

|  |  |
| --- | --- |
| 1. Which of the following ***is not*** used in the Context Level Diagram (Level-0 Diagram) of the process model? | 1. Source 2. Destination 3. Data Flow 4. Data Store 5. Process |
| 1. The following are the criteria commonly used to evaluate a project in classifying and ranking IS development projects ***except one***? | 1. Resource Availability 2. Project size / duration 3. Value chain analysis 4. Performance of the stakeholders 5. None of the above |
| 1. Which of the following SDLC refers to the study of a business problem for the purpose of recommending improvements and specifying the business requirements for the solution? | 1. System Design 2. Implementation 3. Maintenance/User Support 4. Project Planning 5. None of the above |
| 1. Which of the following requirement is a constraint on the design to meet specified levels of quality? | 1. Functional Requirement 2. Non-functional Requirement 3. Process Requirement 4. Platform Requirement 5. None of the above |
| 1. The following are technical or quality issues to be addressed in non-functional-requirements of requirement determination ***except one?*** | 1. Portability and Usability 2. Efficiency and Acceptability 3. Performance Characteristics 4. Operation performed 5. Hardware considerations |
| 1. Which of the following requirement gathering method that brings together the key users, managers, and systems analysts involved in the analysis of a current system to collect systems requirements simultaneously? | 1. RAD 2. Prototyping 3. JAD 4. Interviewing 5. Questionnaire |
| 1. Which of the following stakeholders ***are*** participate in setting ***JAD sessions***? | 1. Users and Managers 2. Information System Staffs 3. System Analyst 4. Scribe and Sponsors 5. All of the above |
| 1. Which of the following techniques are useful in the requirements determination process when used for very specific purposes rather than for more general information gathering? | 1. Questionnaire 2. Interview 3. Direct Observation 4. Existing Document Analysis 5. None of the above |
| 1. Which of the following are the building blocks (components) of ***Entity-Relation-Diagram (ERD)***? | 1. Entity 2. Attributes or properties 3. Relationships 4. Constraints 5. All of the above |
| 1. Which of the following model is used to represent the processes, or actions that capture, manipulate, store and distribute data between a system and its environment and among the components within a system? | 1. Data Flow Diagram 2. Conceptual Model 3. Logical Model 4. Physical Model 5. ERD Model |
| 1. Which of the following data flow diagram (DFD) that represents a system’s major processes, data flows and data stores at a high level of detail? | A) Context Diagram  B) Conceptual Data Modeling  C) Level-0-Diagram  D) Primitive DFD  E) None of the above |
| 1. Which of the following model represent the data requirements of the system or organization? | A) Context Diagram  B) Conceptual Data Modeling  C) Level-0-Diagram  D) Primitive DFD  E) None of the above |
| 1. Which of the following part of system analysis perform information gathered during the requirements gathering process needs to be organized into a form that is a meaningful representation of the existing system and of the requirements for the new system? | A) Requirement Determination  B) Modeling the requirements  C) Structuring System Requirements  D) Modeling Conceptual Data  E) All except A |
| 1. Which of the following CBIS is designed to serve middle level managers and support activities such as planning, controlling and administrative activities? | 1. Expert System 2. Management Information System 3. Decision Support System 4. Office Automation System 5. All of the above |

***Part Two: Match items in column “A” with its corresponding items in column “B” (1 point each)***

|  |  |
| --- | --- |
| ***Column “A”*** | ***Column “B”*** |
| 1. Organization’s ability to construct the proposed system 2. Collecting and organizing user’s requirement 3. Non-Functional Requirement 4. Constraints on the project plan and development methods 5. Defining clear, discrete tasks and the work needed to complete each task 6. Structured System Development Approaches 7. Constraints on the environment and technology of the system 8. Planning, Analysis, Design and Implementation 9. Describe What the system Should do 10. Interview, Questionnaire and Direct Observation | 1. Quality Requirements 2. Requirement Determination 3. Requirement Structuring 4. Technical Feasibility 5. Functional Requirements 6. Data Collection Methods 7. Operational Feasibility 8. Process Requirements 9. Data Flow Diagram and ERD 10. Economic Feasibility 11. Platform Requirements 12. System Development Life Cycle(SDLC) 13. Project Planning 14. Project Initiation |

***Part Four: - Give short and precise answer for the following Questions***

1. Zelalem Mengesha and Yonatan Kidane are employed by Adama Hospital as ***System Analysts***. They have been assigned to develop a very complex patient monitoring system for ***Patient Record Unit*** using a new display technology by combining all of the team members and collect the user’s requirement simultaneously. Which modern methodology is suitable for this project and reason out for those methodologies you suggest? (5 points)
2. Read the following business domain carefully and answer the required questions accordingly (5 points)

A company database needs to store information about employees (identifyied by ssn, with salary and phone as attributes); departments (identified by dno, with dname and budget as attributes); and children of employees (with name and age as attributes). Employees work in departments; each department is managed by an employee; a child must be identified uniquely by name when the parent (who is an employee; assume that only one parent works for the company) is known. We are not interested in information about a child once the parent leaves the company.

* + 1. Identify those entities with its corresponding attributes
    2. Draw Entity Relation Diagram (ERD)

1. Draw a Context Data Flow Diagram (DFD) for the system you think as for your project work you select in group (5 points)

***NSWERSHEET***

***Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_IDNO\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***TRUE/FALSE ITEMS*** | | ***CHOICE ITEMS*** | | | | ***MATCHING*** | |
| **1** |  | **1** |  | **11** |  | **1** |  |
| **2** |  | **2** |  | **12** |  | **2** |  |
| **3** |  | **3** |  | **13** |  | **3** |  |
| **4** |  | **4** |  | **14** |  | **4** |  |
| **5** |  | **5** |  | **15** |  | **5** |  |
| **6** |  | **6** |  | **16** |  | **6** |  |
| **7** |  | **7** |  | **17** |  | **7** |  |
| **8** |  | **8** |  | **18** |  | **8** |  |
| **9** |  | **9** |  | **19** |  | **9** |  |
| **10** |  | **10** |  | **20** |  | **10** |  |

***Department\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***