



FINAL ALTERNATIVE ASSESSMENT

(COVER PAGE)

Session : April 2022

Programme : Diploma In Information Technology (DITN)

Course : ICT1106: System Analysis And Design

Date of Examination : August 6, 2022 (Saturday)

Time : 4.00pm – 6.30pm Reading Time : Nil

Duration : 2 Hours : 30 Minutes

Note: 30 minutes is added into the duration of the examination to factor in any connectivity matters and for you to scan and upload your scripts.

Special Instructions :

Section A: Answer **ALL** the questions in the foolscaps paper.

Section B : Answer **ALL** the questions in the foolscaps paper.

Materials permitted : Non-Programmable Calculator

Materials provided : Nil

Examiner(s) : Mr Tang Yang Tze and Ms Koagella Utandy

Moderator : Ms Nuur Shuhada Mohd Najib

This paper consists of 7 printed pages, including the cover page

DIPLOMA IN INFORMATION TECHNOLOGY PROGRAMME (DITN)
ICT1106: SYSTEM ANALYSIS AND DESIGN
FINAL ALTERNATIVE ASSESSMENT: APRIL 2022 SESSION

SECTION A (40 marks)

Instructions: This section consists of **TWENTY (20)** multiple-choice questions. Answer **ALL** the questions in the foolscap papers. All questions carry equal marks.

1. A system has the following general characteristics, **EXCEPT**
 - A. A system has some subsystems with specific functions
 - B. A system has some interfaces for input and output
 - C. A system has a mechanism to control internal balance
 - D. A system has a boundary that defines it's purpose or goal

2. Alice is appointed as the system analyst of a system development project. Which of the following skills is essential for her?
 - A. Analytical skill only
 - B. Leadership skill only
 - C. Communication skill only
 - D. All of the above

3. Adam is the manager of a manufacturing company. He oversees the daily operations, employee duties, daily sales and marketing planning. Which of the following types of information system you would recommend to him?
 - A. Management Information System
 - B. Office Automation System
 - C. Transaction Processing System
 - D. Process Control System

4. System Development Life Cycle (SDLC) covers the following phases, **EXCEPT**
 - A. Evaluating a request for new system development
 - B. Analyzing the requirements of current system
 - C. Implementation of a new information system
 - D. Termination of unproductive information systems

5. What is the information system strategy of a company?
 - A. A strategic plan for using IT capabilities to solve business problem
 - B. A strategic plan for identifying new business opportunities and risks
 - C. A strategic plan for improving the IT infrastructure of a company
 - D. None of the above

6. What is the reason of conducting a preliminary investigation for a system request?
- A. To identify the technical requirements and constraints of a new system
 - B. To gather information and facts for the evaluation of system request
 - C. To examine the operational and security issues of current system
 - D. To plan the deployment and maintenance of a new system
7. Technical feasibility can be used to evaluate the following aspects of a system request, **EXCEPT**
- A. IT resources for system development
 - B. Financial impact of system development
 - C. IT expertise for system development
 - D. Current condition of IT infrastructure
8. System Analyst needs to gather some quantitative information from a group of 500 users for analysis purpose. Which of the following fact-finding methods is the **BEST** option for this task?
- A. Interviews
 - B. Observation
 - C. Questionnaires
 - D. Samplings
9. Which of the following information can be obtained by using the document review method?
- A. Detailed information about operational errors or problems
 - B. Important or representative events at the operational sites
 - C. New development of the Cloud computing technology
 - D. Organizational information about the current system
10. What is the document used by a business manager to propose major enhancements for existing sales management system or development of new sales management system?
- A. System request
 - B. IT service ticket
 - C. Helpdesk form
 - D. Business report
11. Which of the following quality factors can be used to describe the expected operational standards such as processing time and response time of a system?
- A. Performance
 - B. Reliability
 - C. Security
 - D. Accuracy

12. What is an operational environment for system testing?
- A. A private network for restricted access by the IT staff only
 - B. A private network for system testing via sample data only
 - C. A private or public network for end users to test a new system
 - D. None of the above
13. Which of the following documentations provides details such as user accounts, rules and privileges of a new system?
- A. Operations documentation
 - B. Program documentation
 - C. System documentation
 - D. User documentation
14. Project manager needs to plan the conversion of a new system for a multinational company. This system is going to be implemented in several cities in Asia. Which of the following methods is the **BEST** option for this task?
- A. Direct cutover
 - B. Phased operation
 - C. Pilot operation
 - D. Parallel operation
15. A company can use the following options to provide system support to the end users, **EXCEPT**
- A. User trainings
 - B. IT helpdesk
 - C. Maintenance team
 - D. None of the above
16. Good project management is essential to the completion of a system development project. Which of the following options is **NOT** a responsibility of project management?
- A. Prepare and update the project schedule
 - B. Assign duties to the project team members
 - C. Investigate and analyze the system requirements
 - D. Define the standards and procedures of a project
17. You need a tool to prepare the schedule of a system development project and identify the critical tasks in the schedule to avoid delay in completing the project. Which of the following tools is the **BEST** option?
- A. Flowchart
 - B. Gantt chart
 - C. PERT diagram
 - D. Class diagram

18. A typical Decision Support System (DSS) has the following capabilities, **EXCEPT**
- Automate daily routine business operations
 - Retrieve data from multiple internal databases
 - Generate models and charts for business analyses
 - Help users to make decisions for unstructured problems
19. Which of the following SDLC phases does **NOT** require intensive participation of system analyst?
- System analysis phase
 - System design phase
 - System maintenance and support phase
 - None of the above
20. The object oriented approach can
- support high level abstraction of a system
 - promote reusability of hardware components of a system
- Both (I) and (II) are correct
 - Only (I) is correct
 - Only (I) is correct
 - Both (I) and (II) are incorrect

SECTION B (60 marks)

Instructions: This section consists of **FOUR (4)** questions. Answer **ALL** the questions in the foolscap papers. All questions carry equal marks.

Question 1

You are given the forecasted financial data of a system development project. The proposed system is expected to be implemented in January of 2023. No maintenance cost for the first year of implementation. There is an estimated maintenance cost for subsequent years. The proposed system is estimated to generate revenue incrementally.

Year	1	2	3	4	5	6
Cost (RM)	500,000	50,000	50,000	50,000	50,000	50,000
Revenue (RM)	200,000	200,000	240,000	240,000	290,000	290,000

- Calculate the cumulative cost and revenue for each year. (6 marks)
- Calculate the return on investment (ROI) for each year. (6 marks)
- Will this project achieve break-even in three years? Justify your answer. (3 marks)

(Total 15 marks)

Question 2

You are given the description of Online Registration System for a private college. Convert the description into a Use Case diagram. You are required to use the UML notations.

All students are given an account to use the system for online registration of classes. A student can use the system to select several courses for the new semester. Student can see the total semester fees before the confirmation of registration. After confirmation, the system will send information to a billing system. The billing system will send invoice to the student.

The lecturers can use the system to select courses to teach for upcoming semester. A lecturer can select maximum five courses for a semester as long as no timetable clash. If a course has multiple sections, one lecturer can select multiple sections. Or, the sections can be selected by different lecturers. Lecturer can also request for the course timetable to check the time slots (classes) of a course. The system can display the timetables of several courses at the same time.

The registrars are responsible for managing the student information, lecturer information and course information. The system has some modules for registrar to perform the jobs. A registrar can use a specific module to manage the student information. Registrar is allowed to access all student records and update some details only. Registrar can use another module to manage the lecturer information. Registrar is also allowed to access all lecturer records and update some details only. Registrar can use a different module to manage course information. Registrar is allowed to create a new course approved by the college management and edit the details of a course.

(15 marks)

Question 3

(a) Explain the super-sub relationship of classes. Use a suitable example (diagram) to support your explanation.

(6 marks)

(b) Convert the following description of Online Banking System into a Class diagram. You are required to use the UML notations.

The system provides many types of online banking services to customers. Customers must have active accounts. Customers can use the system to make online transactions such as check balance, transfer and payment. Every transaction is unique and it will be recorded.

Customers can use the system to apply for loans. Customers are required to provide additional details and supporting documents for loan application. The application will be processed by a bank staff. If the required details or documents are incomplete, customers will be informed to resubmit the application. Only a bank manager can approve or reject a loan application.

Customers can also use the system to manage personal investments such as mutual funds or stock trading. Customers can use the system to select an investment such as a fund or stock. Customer can check details and prices of investment products. Customers can buy or sell the investment products at flexible time. Customers can use the system to pay the investment fees separately.

(9 marks)

(Total 15 marks)

Question 4

(a) Compare the corrective maintenance method and preventive maintenance method for system maintenance.

(6 marks)

(b) Describe the functional and non-functional requirements of a business information system.

(6 marks)

(c) Explain the use of present value analysis for the financial analysis of a system development project.

(3 marks)

(Total 15 marks)

-THE END -

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