RESIT ALTERNATIVE ASSESSMENT

(COVER PAGE)

Session	:	**January 2022**
Programme	:	Diploma In Information Technology (DITN) Diploma In Computer Science (DCS)
Course	:	**ICT1106: System Analysis And Design**
Date of Examination	:	April 20, 2022 (Wednesday)
Time	:	12.00pm – 2.30pm 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)	:	**Tang Yang Tze**, Thanesh Doraisamy, Andrew Ho Mun Wah and Nuur Shuhada
Moderator	:	Ms Nadhrah Abdul Hadi

*This paper consists of **3** printed pages, including the cover page*

DIPLOMA IN INFORMATION TECHNOLOGY ORIGRAMME (DITN)
DIPLOMA IN COMPUTER SCIENCE PROGRAMME (DCS)
ICT1106: SYSTEM ANALYSIS AND DESIGN
RESIT ALTERNATIVE ASSESSMENT: JANUARY 2022 SESSION

SECTION A (40 marks)

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

Question 1

You are planning the system conversion for a new information system of a multinational company. Describe **FOUR (4)** methods for the system conversion process. You need to select **ONE (1)** method with lower cost and risk of failure for this process. Justify your answer.

(10 marks)

Question 2

Explain **THREE (3)** types of feasibility for the evaluation of a system request. Justify the decision for a system request based on the feasibility study.

(10 marks)

Question 3

Information system is a combination of components working together to support the information needs of organization. Describe **FIVE (5)** components of information system.

(10 marks)

Question 4

With the aid of suitable examples/diagrams, discuss the concepts of **class** and **polymorphism** in object oriented (OO) analysis and design.

(10 marks)

SECTION B (60 Marks)

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

Question 1

You are given the description of Customer Management System operated by a local bus company. Convert the description of this system into a Use Case diagram.

A customer can enquire the company about bus trips to specific destinations in Malaysia. After being given the relevant information, customer can select the desired bus trip. The customer can proceed to make a reservation for the selected bus trip. A customer can also make a reservation without enquiry.

The customer can make payment for the reservation at the bus counter, cash or card payment. The counter staff will process the payment. The reservation will be revoked if no payment after two days. After payment is made, the counter staff will issue the bus boarding pass to the customer. Any time before the payment, customer can change the reservation. Once the payment is made and bus boarding pass is issued, customer is not allowed to make any change.

Upon boarding, the customer will scan the bus boarding pass. The customer must present the bus boarding pass in order to enter the bus. Otherwise, customer is not allowed to enter the bus.

(15 marks)

Question 2

You are given the description of the enrollment system. Convert the description into a Class diagram. You are required to use the UML notations to represent the classes, associations and cardinalities.

A lecturer has a name, address, phone number, email address and salary. A student has a name, address, phone number, email address, student number and average mark (of all course final marks). A course has a name, number and fees. When a student is enrolled in a course, the marks for this enrollment are recorded and the current average as well as the final marks can be obtained from the enrollment. A student can obtain a list of courses for the enrollment. Lecturers can teach one or more courses. Each course has at least one and maximum three lecturers. There are two types of courses: undergraduate and postgraduate. For undergraduate courses, students can drop the course. For postgraduate courses, student cannot drop the course

(15 marks)

Question 3

You are given the projected costs and benefits of a system development project for the next five years. Given the PV factor is 9% (or 0.09) for all five years.

Year	0	1	2	3	4	5
Cost (RM)	200,000	30,000	30,000	30,000	30.000	30,000
Revenue (RM)	0	100,000	100,000	100,000	100,000	100,000

As the manager of this project, you are required to do the following:

(a) Calculate the present value of cost and revenue for all the five years. (9 marks)
(b) Calculate the cumulative present value of costs and benefits for all five years. (2 marks)
(c) Calculate the net present value (NPV) for this system after year 5. (1 marks)
(d) Discuss the cost-benefit analysis of this system development project. (3 marks)

(Total: 15 marks)

Question 4

You are given the planning of activities and durations of a system development project.

Activity	Duration (Months)	Immediate Preceding Activity
A	3	None
B	2	None
C	4	A
D	3	A
E	2	B
F	2	C, D, E
G	1	D, E

As the system analyst of this project, you are required to do the following:

(a) Convert the tabulated data into PERT/CPM diagram for this project. (8 marks)
(b) Indicate the ECT and LCT for each node in the diagram. (5 marks)
(c) Indicate the critical path of this project. Justify your answer. (2 marks)

(Total: 15 marks)

-- The End –

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