ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
Department of Computer Science and Engineering (CSE)

MID SEMESTER EXAMINATION   **SUMMER SEMESTER, 2019-2020**
DURATION: 1 Hour 30 Minutes   **FULL MARKS: 50**

CSE 4407: System Analysis and Design

Programmable calculators are not allowed. Do not write anything on the question paper.
There are **3 (three)** questions. Answer **ALL** of them.
Figures in the right margin indicate marks.

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1. a) After the requirement analysis phase, the system analysts have found the following possible   11
configurations for the DFD for a simple "Order Processing System" for "Burger K". The words
in bold and italic can mean a process, data store, entity or information name.

   i. A *CUSTOMER* inserts his *LOCATION INFO* in the *PROVIDE LOCATION INFO*
   process and gets the *BRANCH INFO* of their nearest location.

   ii. A *CUSTOMER* submits an *ORDER* that includes the *BRANCH INFO*. Depending on
   the processing logic, the *RECEIVE ORDER* process either send an *ORDER REJECT
   NOTICE* back to the customer or sends a *FOOD LIST* to the *KITCHEN*.

   iii. A *COMPLETED FOOD ORDER* from the *KITCHEN* is input to the *CREATE
   INVOICE* process, which outputs an *INVOICE* to both the *CUSTOMER* and the
   ACCOUNTS RECEIVABLE data store.

   iv. A *CUSTOMER* makes *PAYMENT* that is processed by *APPLY PAYMENT. APPLY
   PAYMENT* requires *INVOICE DETAIL* input from the *ACCOUNTS RECEIVABLE*
   data store along with the *PAYMENT. APPLY PAYMENT* also outputs *PAYMENT
   DETAIL* back to *ACCOUNTS RECEIVABLE* data store and outputs *COMISSION* to
   the *SALES DEPARTMENT*, *BANK DEPOSIT* to the *BANK*, and *CASH RECEIPTS
   ENTRY* to *ACCOUNTING*.

   v. *APPLY PAYMENT* process returns *CONFIRMATION* back to *CUSTOMER*.
   CUSTOMER can use this *CONFIRMATION* to the *DELIVER FOOD* process which
   calculates customers' location internally and returns *ESTIMATED TIME
   REMAINING* back to the customer and store *DELIVERY DETAILS* and *PENDING
   DELIVERIES* data store.

   Based on the given information, draw the logical context diagram, diagram 0 and 1 child
   diagram.

   b) Write short notes on any **three (3)** of the following: 5
   i. JAD
   ii. Feasibility analysis
   iii. DFD Errors and solutions
   iv. Break-even analysis
   v. Measurement scales in questionnaires

2. a) As a system analyst, you have been tasked to do analysis on the construction of a website for   6
   TripAdvisor, travel company. Draw a fishbone diagram of the possible problems that can occur
   when constructing a web site for the travel company that wants to sell vacations online for the
   next big travel period.

b) What is Leniency, Average tendency and halo effect? How can these problems be solved when administering questionnaires? 5

c) Which documentation technique gathers information that is often shared among users but is rarely written down? Explain elaborately and compare with other available techniques. What are the factors an analyst should consider while choosing a particular technique? 6

3. a) Consider the following list of activities in Table 1. 10

Activity	Predecessor	Duration (In days)
A	None	20
B	A	20
C	B	50
D	C, I	20
E	A	35
F	None	10
G	F	45
H	None	50
I	H, E, G	40

Table 1: List of activities

    i. Draw the **PERT diagram** for the activities and determine the critical path.

    ii. Draw the corresponding **Gantt chart**, assume you are within 60 days and you may have valid parallel activities in your diagram.

b) Metro, Inc., a manufacturer of precise measuring instruments for scientific purposes, has presented you with a list of attributes that its managers think are probably important in selecting a vendor for computer hardware and software. The criteria are not listed in order of importance. 4

- Low price.
- Precisely written software for engineering applications.
- Vendor performs routine maintenance on hardware.
- Training for Delicato employees.

Now answer the followings:

    i. Critique the list of attributes in a paragraph.

    ii. Using its initial input, help Metro, Inc., draw up a more suitable list of criteria for selecting computer hardware and software vendors.

c) What is a user persona? Give an example. 3