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**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER I  
SESSION 2017/2018**

COURSE NAME : SYSTEM ANALYSIS AND DESIGN  
COURSE CODE : BIT 20103  
PROGRAMME CODE : BIT  
EXAMINATION DATE : DECEMBER 2017 / JANUARY 2018  
DURATION : 3 HOURS  
INSTRUCTION : ANSWER ALL QUESTIONS

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THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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**Q1** Answer **Q1(a)** and **Q1(b)** based on case study in **Figure Q1**.

1 The decision maker identified an important stakeholder who needs to be  
2 consulted for the further steps. This stakeholder is Mr. Robert, he is the  
3 manager of all departments which are developing and refining embedded system  
4 in cars. Due to his jobs and the upcoming end-of-quarter closing he is rarely  
5 available.  
6 Moreover, the prospective users are very important for the success of  
7 the product; this is the reason why the decision maker wants to get  
8 requirements from a huge user group. The group of user shall be at least five  
9 persons.  
10 In addition, the decision maker also emphasizes that the handbook of  
11 the competitor's system is necessary to take into account in the initial  
12 step. Also the system which has been already introduced from the competitor  
13 shall be also faced.  
14 Finally, the decision maker gave you a huge budget to conduct the first  
15 steps.

**Figure Q1**

- (a) Identify **FOUR (4)** requirement sources by stating the line number. (8 marks)
  
- (b) Propose an elicitation technique for each requirement source answered in **Q1(a)**. Justify your answer. (12 marks)

**Q2** (a) Describe **THREE (3)** special types of entities in Entity Relationships Diagram (ERD)? (6 marks)

- (b) Develop an ERD based on the information provided in **Figure Q2(b)**. Document all the assumptions make about the mapping constraints.

A new university wants to set up a database to record details about its staff, and the departments they belong to. They intend to record the following information.

- For each member of staff, their staff identity number, name, job title, and salary.
- For each department, its name and address.
- For each member of staff, all departments that they belong to. It is required that every member of staff belongs to **at least one** department.
- For each department, the head of department. It is required that each department has **exactly one** head of department.

**Figure Q2(b)**

(14 marks)



**Q3** (a) Discuss the advantages of using graphical output in screen design. (5 marks)

(b) Explain why three clicks rule is important during system interface navigation. (5 marks)

(c) Design an input form that enable customer to register and book their travel based on **Figure Q3(c)**.

Easy Travel Company is considering installing new system that allow customer to register, book their travel and track the progress of their booking. Currently, customer fill out form specifying their individual travel details.

**Figure Q3(c)** (10 marks)

**Q4** Answer **Q4(a)** and **Q4(b)** based on the scenario in **Figure Q4**.

1	• Buses come to a garage for repairs.
2	• A mechanic and helper perform the repair, record the reason for the repair and record the total cost of all parts used on a Shop Repair Order.
3	
4	
5	• Information on labor, parts and repair outcome is used for billing by the Accounting Department, parts monitoring by the inventory management computer system and a performance review by the supervisor.
6	
7	
8	

**Figure Q4**

(a) Develop a context diagram. (5 marks)

(b) Develop a DFD level 0. **TERBUKA** (15 marks)

**Q5** (a) Give **TWO (2)** differences of using custom development versus buying a packaged software system. (4 marks)

- (b) Differentiate between logical and physical design based on
- (i) what the model depict (2 marks)
  - (ii) types of data stores (2 marks)
- (c) Based on **Figure Q(5)**, specify **THREE (3)** examples for each operational requirements, performance requirements and security requirements.

Adam has been part of system development project at Boutique Indah Maya that working on defining architecture design for a new system. Throughout Malaysia, this company have 10 branches and they want to upgrade their physical business towards online business. The major focus of this project is to ensure customer can register, shop online, pay online and managing their personal and shopping data.

**Figure Q(5)**

(12 marks)

**- END OF QUESTION -**

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