# UTHM
### Universiti Tun Hussein Onn Malaysia

# UNIVERSITI TUN HUSSEIN ONN MALAYSIA

## FINAL EXAMINATION
## SEMESTER I
## SESSION 2022/2023

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| COURSE NAME | : | LOGISTICS MANAGEMENT |
| COURSE CODE | : | BPB 44903 |
| PROGRAMME CODE | : | BPA |
| EXAMINATION DATE | : | FEBRUARY 2023 |
| DURATION | : | 3 HOURS |
| INSTRUCTION | | 1. ANSWER ALL QUESTIONS |
| | | 2. THIS FINAL EXAMINATION IS CONDUCTED VIA **CLOSED BOOK** |
| | | 3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK |

THIS QUESTION PAPER CONSISTS OF **FIVE (5)** PAGES

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**Q1** Zafrin Poultry Sdn Bhd supplies chicken to five hypermarkets in several cities in the state of Johor. Realizing the important of serving the hypermarkets with minimum cost, the management of the company decided to set-up a new chicken processing factory facility in order to minimize transportation cost. **Table Q1** below summarize the location coordinates and actual consumption rate of each hypermarket.

**Table Q1: Hypermarket Location and Consumption Rate**

| Hypermarket Location | X Coordinate (km) | Y Coordinate (km) | Consumption Rate (1000 kg per week) |
|---|---|---|---|
| Senai | 60 | 20 | 50 |
| Jemaluang | 45 | 70 | 150 |
| Muar | 20 | 50 | 100 |
| Batu Pahat | 30 | 30 | 200 |
| Segamat | 40 | 60 | 250 |

(a) Calculate the most optimal location X and Y coordinates for the new chicken processing factory facility, based on Centre-of-Gravity method.

(14 marks)

(b) Outline **FOUR (4)** strategic importances of facility location which influenced the business decision.

(12 marks)

**Q2** Ilham PC Sdn Bhd sells laptop, tablet, server and desktop computers. The company has a huge factory in Batu Pahat that assemble, integrate and test the products based on customer orders. The factory operation produces large quantity and high variety of products as per customer specification requested. **Table Q2** below shows the list of the process involve in their daily operation.

**Table Q2: Process involve in Ilham PC Sdn. Bhd.**

| Process involves | Total time / hours | Wasted time/ hours | Activity time/ hours |
|---|---|---|---|
| Good in from supplier | 0 | 3:00 | 2:50 |
| Key in info in Warehouse Management System | 5:50 | 2:00 | 1:30 |
| Move good to storage | 9:20 | 7:00 | 4:30 |
| Receive order | 20:50 | 1:00 | 0:30 |
| Picking good | 22:20 | 10:00 | 3:30 |
| Assemble good | 35:50 | 20:00 | 5:30 |
| Inspection | 61:20 | 15:00 | 5:00 |
| Packing | 81:20 | 3:00 | 1:30 |
| Key in info in Warehouse Management System | 85:50 | 2:00 | 0:30 |
| Dispatch | 88:20 | 0 | 0:45 |

Based on the above case:

(a)  Evaluate the lead time occurred in Ilham PC Sdn Bhd factory using a chart that shows the list of activities and its production time.

(10 marks)

(b)  Determine **FIVE (5)** mehods in which Ilham PC Sdn Bhd can use time to meet customer needs better and add more value.

(10 marks)

**Q3**  (a)  Ammar Printing Sdn Bhd sells a printer for which the annual demand is 75,000 units of multipurpose printing and scanner printer. Currently, Eppsun Printer Bhd. is the main supplier to Ammar Printing Sdn Bhd. Ammar Printing Sdn Bhd is paying RM 488.45 to Eppsun Printer Bhd. for each unit, if the number of order is at least 5,500 units or more.

A new potential supplier, Hewwet Printer has offered RM 488.15 for the same item. Ammar Printing Sdn Bhd incurs a fixed order placement cost of RM 500.00 with the annual holding cost of 25 % of each unit cost.

Analyze whether Ammar Printing Sdn Bhd should stick with existing supplier; Eppsun Printer Bhd or take advantage of the new supplier who offer a quantity discount.

(12 marks)

(b)  Firdaus Tyres Sdn. Bhd. is one of the new tyre providers in Batu Pahat district, Johor. Assuming the weekly demand for tyres at Firdaus Tyres Sdn. Bhd. is normally distributed with the mean of 3500 and standard deviation of 450. The supplier, Bridgstone Tyre Bhd takes 3 days to fill an order placed by Firdaus Tyres Sdn. Bhd.'s purchasing manager. The purchasing manager currently orders 5,000 tyres when the inventory on hand drops to 2,500 units.

Based on the above case, calculate:

(i)  Safety Inventory

(ii)  Cycle Inventory

(iii)  Average Inventory

(6 marks)

(c)  Construct a graph based on the findings, to support Firdaus Tyres Sdn. Bhd. on ordering replenishment for their product.

(2 marks)

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**Q4**    Protega Automotive Sdn. Bhd. is company that sells MPV Veloz at Johor. They currently supply the car from 3 different location with the accumulation of supply at 600 units. This shipping origin will accommodate the demand from 3 different distribution centers with the accumulation of demand at 600 units. Below are the tables that show the breakdown of demand and supply by each origin and distribution centers.

**Table Q4(a): Shipping Origin and Supply Limit**

| Shipping Origin | Supply Limit (units) |
|---|---|
| A | 200 |
| B | 200 |
| C | 200 |

**Table Q4(b): Distribution Centers and Demand Limit**

| Distribution Centers | Demand Limit |
|---|---|
| D | 150 |
| E | 200 |
| F | 250 |

Each of the shipping origin have shared to Protega Automotive Sdn. Bhd.on the shipping cost per unit upon transporting the cars from the shipping origin to each of different distribution centers. The detail on the shipping cost per unit is stated at the table below: -

**Table Q4(c): Shipping Cost per Unit**

| Shipping cost per unit/ Shipping origin | D (RM) | E (RM) | F (RM) |
|---|---|---|---|
| A | 6 | 9 | 16 |
| B | 11 | 10 | 7 |
| C | 16 | 12 | 10 |

Based on the case above,

(a)    Explain **THREE (3)** types of Transportation Problems model.

(6 marks)

(b)    Evaluate the most optimal solution on the transporting the MPV Veloz based on Least Cost Method.

(10 marks)

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**Q5** (a) Vendor rating is a measurement effort focused on supplier performance. Basic spot checks on delivery reliability (correct quantities and times) are used typically for commercial suppliers. Broader-based measures are required for both strategic and preferred relationship between the focal firm and the suppliers.

Discuss **FOUR (4)** steps involved in setting up a vendor rating system.

(8 marks)

(b) Halal Grocery Sdn Bhd is a new grocery store that focus on selling halal goods including fresh meat and chicken. Currently, the company solely the supply from international live stock company that located in Australia. Upon transporting the goods from the supplier, the goods have been placed in one own pallet. In order to reduce the shipping cost, both supplier and Halal Grocery Sdn. Bhd. agreed the halal good to be place in the same load carrier with other goods before it being imported to the port of destination.

Once the goods arrived at the port of destination, the goods been stored in the nearest warehouse for temporary placement. The goods have been placed at a low temperature room with other goods to ensure the quality of the meat before the packaging process.

During the packaging process, all the meat have been packaged with the raw material which did not decreed by najis and other requirement statement in the shariah law apart from ensuring the high level of cleanliness and it hygiene. Based on the above case,

Analyze **THREE (3)** components in halal logistics made by both supplier and Halal Grocery Sdn Bhd upon handling the management of halal goods.

(10 marks)

-END OF QUESTIONS –

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