



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2014/2015**

COURSE NAME : SUPPLY CHAIN MANAGEMENT
COURSE CODE : BPB 32303
PROGRAMME : 1 BPB / 2 BPB
EXAMINATION DATE : JUNE 2015 / JULY 2015
DURATION : 3 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF **SIX (6)** PAGES

- Q1** (a) Fujitaro Component (M) Sdn. Bhd. sells relays to car makers such as Toyota, Nissan, Honda and General Motors. The annual demand is approximately 1,200 relays. Fujitaro manufacturing costs is RM28 for each relay and estimates that the annual holding cost is 30 percent of the relay's value. It costs approximately RM20 to place an order (administration costs) for parts purchase in making a relay. Fujitaro currently orders 100 units of parts for making relays per month.

Calculate:

- (i) The sum of Annual Holding Cost and Ordering Cost. (4 marks)
 - (ii) Economic Order Quantity (EOQ). (2 marks)
 - (iii) The orders that will be placed per year using EOQ. (2 marks)
 - (iv) The new sum of Annual Holding Cost and Ordering Cost using EOQ. (4 marks)
 - (v) The amount that can be saved in comparison with the current order quantity. (2 marks)
- (b) Upon closer observation, Fujitaro determines that the demand for relays are normally exported out with mean 4 relays per day and standard deviation (σ) is 3 relays per day. Fujitaro is operating 300 days per year. It usually takes about 4 days to receive an order from the suppliers of parts purchased to manufacture the relay. The re-order point when the inventory level drop is 26. Average lot size is 20 per order.

Compute:

- (i) Safety Stock (2 marks)
- (ii) Cycle Inventory (2 marks)
- (iii) Average Inventory (2 marks)
- (iv) Average flow time (2 marks)
- (v) Holding Cost associated with the safety stock (3 marks)

- Q2** (a) A successful sourcing strategy requires a thorough understanding of a company’s business strategy, the resources required to deliver that strategy, the market forces and the unique risks within the company associated with implementing specific approaches. Third parties involvement may increase the supply chain surplus effectively if they able to aggregate their assets.

Justify **TWO (2)** of the aggregations that a third party can increase the supply chain surplus.

(10 marks)

- (b) Fujitaro produced a thousand of base mould in making relay per week with standard cost of RM1.00 per piece. The supply chain manager has identified potential outsource willing to supply base mould at RM0.97 per piece. Before making decision, supply chain manager evaluates the performance of In-House and potential Outsource supplier. **Table Q2** is the evaluation result from the final analysis.

Table Q2

Evaluation Elements	In-House	Outsource
Average lead time	2 weeks	6 weeks
Batch per delivery	2,000 pieces	8,000 pieces
Standard Deviation	1 week	4 weeks
Annual material cost	RM52,000	RM50,440
Average cycle inventory	1,000 pieces	4,000 pieces
Annual cost of holding cycle inventory	RM250	RM970
Standard Deviation of demand during lead time	1,086.28	4,066.94
Safety inventory	1,787	6,690
Annual cost of holding safety inventory	RM447	RM1,622
Annual total inventory cost	RM52,697	RM53,032

Fujitaro has a holding cost of 25 percent with cycle service level (CSL) of 95 percent. Weekly demand has a mean of 1,000 and a standard deviation of 300. Taking all performance characteristics into account;

Discuss the decision that Supply Chain manager should make between choosing In-House and Outsource.

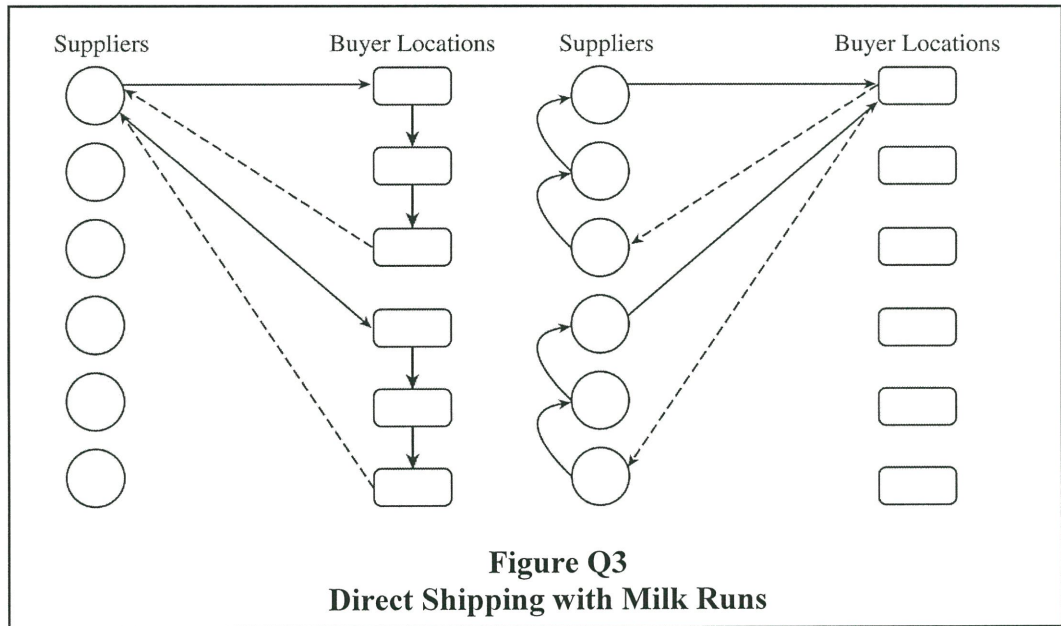
(5 marks)

- (c) In general, parts and products can be divided into two categories namely direct materials and indirect materials. These materials can be categorised based on their value/cost and how critical they are. In product categorisation, they can be classified into four segments, e.g. general items, bulk purchase items, critical items and strategic items.

Construct the diagram of product categorisation of those four classified segments.

(10 marks)

- Q3** (a) The design of a transportation network affects the performance of a supply chain by establishing within which operational decisions regarding scheduling and the routing are made.



As shown in **Figure Q3**, Direct Shipping with Milk Runs is one of a variety of transportation networks.

- (i) Outline the system works Direct Shipping with Milk Runs in transportation networks. (5 marks)
 - (ii) Determine **TWO (2)** benefits of using Direct Shipping with Milk Runs against others transportation network. (4 marks)
 - (iii) Determine **TWO (2)** disadvantages of the system. (4 marks)
- (b) Kedai 1 Malaysia has eight stores in Batu Pahat district supplied from four supply sources. Trucks have a capacity of 40,000 units and cost RM1, 000 per delivery. The cost of holding one unit in inventory at retail for a year is RM0.20. Each delivery is considered Full Truck Load (FTL) and using 'Direct Shipment Network'. If annual sales for each product at each retail store are 960,000 units;

Calculate;

- (i) Number of deliveries per year from each supplier to each store. (4 marks)

- (ii) Annual trucking cost from one source to eight stores for direct network. (4 marks)
- (iii) Annual trucking cost from all sources to all stores for direct network. (4 marks)

Q4 (a) Information is crucial to the performance of a supply chain because it provides the basis on which supply chain managers make decisions. Information Technology consists of the tools used to gain awareness of information, analyse the information, and execute on it to improve the performance of the supply chain.

From an enterprise perspective, all processes within its supply chain can be categorized into three main area as of below **Table Q4**.

Table Q4

Supplier Relationship Management (SRM)	Internal Supply Chain Management (ISCM)	Customer Relationship Management (CRM)
Transaction Management Foundation (TMF)		

Analyse the relationship between the three macro processes and Transaction Management Foundation. (12 marks)

(b) The UN Global Compact is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labor, environment and anti-corruption.

The UN Global Compact works toward the vision of a sustainable and inclusive global economy which delivers lasting benefits to people, communities, and markets.

Figure Q4 is the official logo used for the UN Global Compact.



UN Secretary-General, Ban Ki Moon said in his statement;

“The Global Compact asks companies to embrace universal principles and to partner with the United Nations. It has grown to become a critical platform for the UN to engage effectively with enlightened global business.”

In Malaysia, many companies do not have a comprehensive understanding of the sustainability impacts of their supply chain. By managing and improving environmental, social and economic performance throughout supply chains, companies can conserve resources, optimize processes, uncover product innovations, save costs, increase productivity and promote corporate values.

Assuming that you are one of the panels representing UTHM in the international convention at Putrajaya, with the present of the UN Secretary-General, Ban Ki Moon and UN Global Impact representatives, you are required to make a presentation on;

“Sustainability and Corporate Social Responsibility (CSR) awareness for the companies in Malaysia”.

Propose your contents of your presentation by associating with Key Metrics of Sustainability and relate together with Supply Chain Drivers.

(13 marks)

-END OF QUESTIONS-