



**QUALIFICATION** : BCOM HONOURS  
**MODULE** : SUPPLY CHAIN MANAGEMENT  
**CODE** : LMA8X02/LBE02X7  
**DATE** : 16 November 2015 EXAMINATION  
**DURATION** : 180 MINUTES  
**TIME** : 08:30  
**TOTAL MARKS** : 140

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**EXAMINER** : DR D KUMAR  
**MODERATOR** : MR L FRANSMAN  
**NUMBER OF PAGES** : 3 PAGES

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**INSTRUCTIONS TO CANDIDATES:**

- Answer all the 10 questions
- Question papers must be handed in.
- This is a closed book assessment.
- Read the questions carefully and answer only what is asked.
- Number your answers clearly.
- Write neatly and legibly.
- Structure your answers by using appropriate headings and sub-headings.
- The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment.

## **Case Study**

This case study is about Asian Paints, an Indian paints company.

Since its foundation in 1942, Asian Paints has come a long way to become India's largest and Asia's third largest paint company, with a turnover of INR 141.83 billion. Asian Paints operates in 19 countries and has 26 paint manufacturing facilities in the world servicing consumers in over 65 countries.

Asian Paints has always been a leader in the paint industry, pushing new concepts in India like Colour Worlds, Home Solutions, Colour Next, and Kids' World.

For its Indian operations, Asian Paints sources its raw materials from local vendors (65%) and international vendors (35%). The 25% of raw materials are packaging materials that are primarily locally sourced. Some of these local vendors are situated next doors to the factories. There are four factories in India that produces more than 3000 SKUs to distributed country wide. There are two channels of distribution, one via Regional Distribution Centres to Depots (RDCs, 35% of the total distributed volume) and other directly to the Depots. There are total 52 depots that the company owns. The lead time of the products from factory to RDCs is 1-2 days and from RDCs to Depot is 2-3 days. However, a direct shipment from factory to Depots takes 2-4 days. Asian Paints serves two sets of customers – Consumer and Industrial order, which follows different order patterns.

The paint production is very simple, however scheduling is a key challenge. One of the Asian Paints production plant caters to roughly 200 different customer orders in a month. The plant uses a technology jointly developed with Kansai Paints of Japan. The production plan follows a batch process, with first stage being mixing of base ingredients. This is a batch process that takes between 2-4 hours to complete. The mixed ingredients are then moved into a large tank, where additives and colouring pigments are added, which takes between 5 and 10 hours to complete. The next step is packaging, where the ready paint is packed into different pack sizes. The packs are then kitted together into layers, which further makes a pallet. The pallets are then tagged with batch details and shipped to the factory warehouse. The shop floor monitoring and management is key to optimise production efficiency.

Last financial year 2014-15, Asian Paints had an annual sales of INR 103 billion (Indian operations). Average inventory of the year was INR 25 million, with cost of goods sold at INR 314 million. Asian paints, for the same financial year, has account receivables of 33 days and payable of 25 days. This financial year 2015-16, forecast for sales is INR 111 billion.

### **Answer the following question based on the above case study**

- 1.1. Draw the supply chain diagram for Asian Paints' supply chain. Indicate all the supply chain flows. (10)
- 1.2. Explain the supply chain issues faced by Asian Paints' overall supply chain. (10)

- 1.3. As indicated, shop floor scheduling is key to Asian Paints success. Draw a SCOR level 2 process flow diagram for its production process. (15)
- 1.4. In your view, debate the challenges faced by Asian Paints in its production process. (10)
- 1.5. How do you propose should the performance of Asian Paints' production process be measured? (10)
- 1.6. Collaboration with suppliers is now more critical than ever. In your view, explain the different types of collaborations possible between suppliers and Asian Paints. (20)
- 1.7. Calculate the following for Asian Paints for the last financial year:
  - a. Inventory days (5)
  - b. Cash-to-cash cycle time (5)
  - c. If cash-to-cash cycle time for this financial year is projected to be 34 days, how much inventory reduction in INR value is required for this year? (10)
- 1.8. Describe the various order fulfilment mechanisms for Asian Paints' production process. (16)
- 1.9. Define the business process re-engineering effect. How should Asian Paints use this to improve its production process? (15)
- 1.10. Discuss supply chain management. In your view, how should it be defined? Explain the core objectives of supply chain management. (14)

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