



**INDIAN INSTITUTE OF MATERIALS MANAGEMENT**  
**Post Graduate Diploma in Materials Management**  
**Graduate Diploma in Materials Management**  
**PAPER No. 12**  
**Packaging & Distribution**

**Dec 2018**

**Date : 30.12.2018**  
**Time : 10.00 a.m to 1.00 pm**

**Max. Marks :100**  
**Duration : 3 Hrs.**

**Instructions:**

1. From Part A – Answer all questions (compulsory). Each sub questions carries 1 mark.
2. From Part B – Answer any 3 questions out of 5. Each question carries 16 marks.
3. Part C is a case study (compulsory) with questions. Read the case study carefully and answer the questions
4. Please read the instructions given in the answer sheet

**Total : 32 Marks**  
**Total : 48 Marks**  
**Total: 20 Marks**

---

**PART A**

**32 marks**

**Attempt all questions. Each sub questions carries 1 mark**

**Q. 1. Fill in the blanks. (Do not reproduce the statement) 8 marks**

- i) Packaging is a part of \_\_\_\_\_ product.
- ii) According to the emerging school of thought primary packaging functions are the flow, the market and the \_\_\_\_\_.
- iii) \_\_\_\_\_ reflects user convenience.
- iv) Protection from damage to products due to shock and vibration is provided by \_\_\_\_\_ materials.
- v) \_\_\_\_\_ can differentiate one brand of product form another brand.
- vi) The \_\_\_\_\_ channel represents the movement of a product or service from the point of purchase to the time it is handed over to consumer.
- vii) The \_\_\_\_\_ package is a perfect cube having equal length, depth, and width with maximum possible density.
- viii) The appropriate mode of \_\_\_\_\_ generally depends on market location, speed, and cost.

**Q.2. State True or false (Please do not reproduce the statement) 8 marks**

- i) Packaging specifications directly influence the time required for packaging operations.
- ii) The number of actors is an important determinant when choosing a logistical packaging system.
- iii) The more exclusive is the product, the more expensive is the packaging.
- iv) LDPE provides good mechanical protection as well as protection against moisture and dirt.
- v) Adhesives distribute stress more efficiently across joints.
- vi) Brokers are intermediaries bringing buyers and sellers together for various manufacturers.
- vii) EDP stands for elementary distribution plan.
- viii) The characteristic that transportation cost per kilometers of distance decreases as distance increases is referred to as economy of scale.

**Q.3. Expand the following**

**8 marks**

- i) PSA
- ii) ESDS
- iii) MVTR
- iv) LFA
- v) IICL
- vi) ICAO
- vii) ULCC
- viii) ERAP

**Q.4. Match A and B**

**8 marks**

- | <b>A</b>               | <b>B</b>                        |
|------------------------|---------------------------------|
| i) Unitization         | a) Voyage based                 |
| ii) Packing            | b) Network design               |
| iii) Apportionment     | c) Risk cover                   |
| iv) Space utilization  | d) Private carrier              |
| v) Hub and spoke       | e) External protective cover    |
| vi) Own transportation | f) Cubic space                  |
| vii) Tramp             | g) Grouped master cartons       |
| viii) Cargo clause     | h) Reduction to smaller volumes |

**PART B**

48 marks

**Answer any 3 questions out of 5. Each question carries 16 marks**

- Q. 5.** a) Elaborate the functions of packaging.  
b) Explain the requirements of cushioning materials.
- Q.6.** a) Explain the salient features of Prevention of Food Adulteration Act.  
b) Explain distribution audit procedure.
- Q.7.** a) Who are the participants in transportation? Discuss.  
b) Explain the role of RFID in packaging with examples. .
- Q.8.** Distinguish between any four **( 4x4 = 16 marks)**  
a) Packing and packaging  
b) Skin wrapping and stretch wrapping  
c) Packaging cost and packaging economics  
d) Palletisation and unitization  
e) Intrinsic factors and extrinsic factors of food degradation
- Q.9.** Write short notes any four **( 4x4 = 16 marks)**  
a) Adhesives  
b) Material handling principles  
c) Transport economics  
d) Bill of exchange  
e) Channels of distribution

**Q.10 Case Study**

Oak Systems Ltd. is an electronic company located in South India with customers spread in and around the southern part of the country. The annual turnover of the company is Rs 50 crores. The main products are computer monitors, Keyboards, SMPS and PROM programmers. The company employs 40 people and has modern facilities for manufacturing. The company employs strict quality assurance measurers and hence enjoys customer confidence. The company reaches out to its customers through their marketing offices located at Chennai, Bangalore, Hyderabad and Mumbai. Of late, like any other company, Oak Systems Ltd. is also facing competition and shrinking market.

The top management has decided to develop new markets in north, and east India. The company transferred two of its marketing executives to Delhi and Kolkatta to start the market development. The company shipped 8 consignments to Delhi and 4 consignments to Kolkatta in the next six months. All the consignments when it reached destination had problems. Five of the consignment had torn cartons with dislocated monitors from the mounting frame and in two other cases the monitors were broken and there were cases of electronic components coming out of the printed circuit board. Out of 4 consignments of keyboard shipped three of them had problems.

Managing director convened a meeting of marketing manager, materials manager, production manager and service manager to find out ways and means of improving the packaging and handling in general and especially to Delhi and Kolkatta. Materials manager who looks after dispatches explained the present system as follows. SMPS and PROM programmers are packed in 3ply corrugated cardboard box and sealed with gum tape and plastic straps. So far these products have been supplied only in the southern part of the country and no complaint with packaging were reported. Keyboard was packed in three ply corrugated cardboard box with thermocole sheets on all the sides. For computer CRT monitors they used two cartons to pack the consignment. The inner carton is of 3ply corrugated cardboard box of the CRT monitor size in which the monitor tightly fits. This carton is put inside another 5 ply corrugated cardboard box along with CPU and the gaps are filled with thermocole sheet of 10-mm thickness. The carton is then sealed with gum tape and plastic straps. The present packing cost comes to 2% of the product cost which is more according to industry standards.

Service manager pointed out that the problem of components coming out of the PCB was due to two reasons. One was due to dry solder and another was due to vibration. MD then requested the production manager to improve the soldering and requested marketing manager and materials manager to improve the packaging. He also wanted the packaging cost at par with industry standards if it could not be brought down.

**Questions:**

1. Bring out the shortcomings in the existing packaging system.
2. If you are hired as packaging consultant how will you advise the materials manager and the marketing manager to improve the packaging?
3. Identify suitable transportation methods for the consignments to Delhi and Kolkatta in order to reduce damage during journey.
4. What are the factors contributing to packaging cost and packaging economics?

\*\*\*\*\*