



Graduateship in Marketing - Stage 4

LOGISTICS MANAGEMENT

FRIDAY, MAY 4, 2007. TIME: 9.30 am - 12.30 pm

Please answer the question in Section A, and **ONE** question from each of Sections B, C and D.

(If more than the specified number of questions in Sections B, C and D are attempted, delete those questions you do not wish to have marked. Otherwise the examiner will mark the **FIRST** question in Sections B, C and D.)

Section A carries **40%** of the marks. All other questions carry equal marks.

Do **NOT** repeat questions in the answers, but show clearly the number of the question attempted on the appropriate page of the Answer Book.

(Note: Marks are awarded for the relevant use of contemporary Irish and or international examples of marketing practice)

SECTION A (40%)

1. Case: Xerox Corporation Distribution System

- (a) Briefly review the issues and facts that James Davison, Xerox Corporation manager of facilities and engineering planning, should take into account when deciding what new facility would be appropriate for the Atlanta area.
- (b) Outline what performance measures should be used to evaluate the three alternative plans.
- (c) Comment on the discussion that Davison's analysis provoked as reported by Howard T. Fall.
- (d) Discuss what issues you think are critical to the decision and suggest, with supporting reasons, what alternative plan should be accepted.

SECTION B (20%)

2. *"If supply chains are to operate as seamless processes then they require openness, trust and a willingness to share information".*

Martin Christopher 1997.

Discuss the implications of this view for buyer/supplier relationships.

3. Assess the key issues in building customer relationships.

P.T.O.

SECTION C (20%)

4. Demand in a hospital for a particular medication averages at 6 per day. It costs the hospital €400 to place an order. This includes all administrative costs including ordering, delivery charges, receiving, storing and checking the products. It costs 20c per day to store each item. The purchase cost is €40 per item for purchases of less than 500 items at a time, and €32 for orders of 500 items or more. There is a 7 day delivery time and shortages are not allowed. What is the best inventory policy?
5. A furniture maker has 6 units of wood and 28 hours of free time, in which he will make decorative screens. Two models have sold well in the past, so he will restrict himself to those two. He estimates that model I requires 2 units of wood and 7 hours of time, while model II requires 1 unit of wood and 8 hours of time. The prices of the models are €120 and €80, respectively. How many screens of each model should the furniture maker assemble if he wishes to maximise his sales revenue?
Formulate a linear programme for this problem. **Do not solve it.**

SECTION D (20%)

6. The Village Butcher Shop traditionally makes its meat loaf from a combination of lean ground beef and ground pork. The ground beef contains 80 per cent meat and 20 per cent fat, and costs the shop 80c per kilogram; the ground pork contains 68 per cent meat and 32 per cent fat, and costs 60c per kilogram.
- (a) Develop a linear programming model of the problem facing the Village Butcher Shop.
- (b) Use a graphical approach to determine how much of each kind of meat should the shop use in each kilogram of meat loaf if it wants to minimise its cost and to keep fat content of the meat to no more than 25 per cent?

7. A car rental company is faced with an allocation problem resulting from rental agreements that allow cars to be returned to locations other than those at which they were originally rented. At the present time, there are two locations (sources) with 15 and 13 surplus cars, respectively, and four locations (destinations) requiring 9, 6, 7, and 9 cars, respectively. Unit transportation costs (in Euro) between the locations are as follows:

	Destination 1	Destination 2	Destination 3	Destination 4
Source 1	€45	€7	€21	€30
Source 2	€14	€8	€9	€31

- (a) Use a transportation algorithm to find a minimum cost plan for meeting the rationalization requirement by transfers between sources.
- (b) State at which source there will be surplus cars.
- (c) State the reasons whether or not your solution is unique.