



## Graduateship in Marketing - Stage 4

### LOGISTICS MANAGEMENT

**THURSDAY, MAY 13, 2010. 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 the question in your answer, 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: Ferle Food, Inc.**

- (a) Review the problems with Ferle Foods.
- (b) Analyse the AT&T account team's response to these problems.
- (c) Discuss any other possible responses not covered in the AT&T study.
- (d) Propose a solution that you think Charlie Sims should bring to the meeting.
- (e) Justify the proposal using information from the case and the AT&T study.

#### SECTION B (20%)

2. *"A new market place is emerging in many European economies – one characterised by maturity".*  
Discuss the changing marketing environment based on the findings of Martin Christopher (2003).
3. Explain the **three** issues that arise when global logistics strategies are being considered.

**P.T.O.**

### SECTION C (20%)

4. HUB Computers Inc. needs 50,000 CPUs for its computers annually, and uses them at the rate of 350 per day. The ordering costs are €50 and the carrying costs are 40% of the unit price. Hilda Business Machines supplies the CPUs at the rate of 650 per day as per the following price list:

Order Quantity	Price per unit €
1 – 2,999	20.00
3,000 – 3,999	19.60
4,000 +	19.40

Assuming gradual delivery, find:

- (a) Economic Order Quantity (EOQ);
  - (b) Optimum Total Cost (TC);
  - (c) Number of orders per year;
  - (d) Time between orders;
  - (e) Maximum inventory level.
5. A supermarket has decided to stay open 24 hours a day. The manager has divided the 24-hour day into six 4-hour periods and determined the following minimum personnel requirements for each period.

Time	Personnel Needed
Midnight to 4.00 am	12
4.00 am to 8.00 am	7
8.00 am to Mid-day	22
Mid-day to 4.00 pm	33
4.00 pm to 8.00 pm	60
8.00 pm to Midnight	42

Personnel must report for work at the beginning of one of the above times and work 8 consecutive hours. If they start at 8.00 pm, midnight, or 4.00 am, they will get paid 30% over the normal rate. The supermarket manager wants to know the number of employees to assign to each 4-hour segment that minimizes total costs.

Formulate a linear programme for this problem. **Do not solve it.**

### SECTION D (20%)

6. Collins Heating Co. has four central-heating installations to design within an 8-week period (40 hours per week). They also have four capable designers, each of whom has been asked to estimate how long it would take to do each job. The work operations scheduler has compiled the estimates shown in the table below.

Designers	Hours to Complete Job			
	1	2	3	4
A	100	140	280	70
B	130	160	200	60
C	80	130	300	90
D	150	110	250	50

- (a) Use assignment linear programming methods to determine how the jobs should be assigned so as to minimise the work time.
- (b) Assuming that the estimates are correct, can the jobs be completed within the 8-weeks period without planning for overtime?
- (c) Assuming one designer per job and no overtime, could the work be completed in 5 weeks?
7. Construct a network diagram for the logistic project consisting of activities A, B, C, ..., L, described below:
- Concurrent activities A and B begin the project
  - Concurrent activities C and D succeed A;
  - Concurrent activities E and G succeed B;
  - Activity F succeeds both C and E;
  - Activity H succeeds both C and D;
  - Activities I and J succeeds G;
  - Activity K succeeds H and F;
  - Activity L succeeds I and J;
  - Activities L and K complete the project.

The activities duration is shown in the table below:

Activity	A	B	C	D	E	F	G	H	I	J	K
Duration (days)	3	2	5	7	3	4	8	13	6	1	10

- (a) Draw CPM network diagram and find the critical path
- (b) The project must be completed in 30 days. Do you anticipate difficulty in meeting the deadline? Explain.
- (c) Can activity H be delayed without delaying the entire project?
- (d) Can activity E be delayed without delaying the entire project?