# Unit 8. Firm behaviour and market structure: *oligopoly and monopolistic competition*
**Free response questions**

## APT 2004

3. Assume that a profit-maximizing firm in a monopolistically competitive industry is in long-run equilibrium.

   (a) Draw a correctly labeled graph that shows the profit-maximizing firm's price and output.

   (b) Assume that the city in which this industry operates eliminates the business license fee (a fixed cost) for all firms in this industry. How does the elimination of the license fee affect each of the following for the individual firm in the short run? Explain your answers.

      (i) Output

      (ii) Economic profits

## APT 2007

3. Two bus companies, Roadway and Rankin Wheels, operate a route from Greensboro to Spring City, transporting a mix of passengers and freight. They must file their schedules with the local transportation board each year and cannot alter them during that year. Those schedules are revealed only after both companies have filed. Each company must choose between an early and a late departure. The relevant payoff matrix appears below, with the first entry in each cell indicating Roadway's daily profit and the second entry in each cell indicating Rankin Wheels' daily profit.

<div align="center">

Rankin Wheels

|  | | Early | Late |
|---|---|---|---|
| | Early | $1,000, $900 | $950, $850 |
| Roadway | | | |
| | Late | $750, $650 | $700, $800 |

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   (a) In which market structure do these firms operate? Explain.

   (b) If Roadway chooses an early departure, which departure time is better for Rankin Wheels?

   (c) Identify the dominant strategy for Roadway.

   (d) Is choosing an early departure a dominant strategy for Rankin Wheels? Explain.

   (e) If both firms know all of the information in the payoff matrix but do not cooperate, what will be Rankin Wheels' daily profit?

# APT 2009

3. Two competing retail firms, Red Shop and Blue Mart, are studying potential locations for new stores in the suburbs of a major city. Each firm must choose between a location north of the city and a location south of the city. The payoff matrix is shown below, with the first entry in each cell indicating Red Shop's daily profit and the second entry indicating Blue Mart's daily profit. Both firms know all of the information in the payoff matrix.

|  | Blue Mart | |
|---|---|---|
|  | **North** | **South** |
| **North** | $900, $1,800 | $3,000, $3,500 |
| **South** | $5,000, $4,000 | $1,500, $1,000 |

(Red Shop labels the rows: North, South)

(a) If Red Shop chooses a location south of the city, which location is better for Blue Mart? Explain.

(b) Is choosing a location to the south of the city a dominant strategy for Red Shop? Explain.

(c) If the two firms cooperate in choosing locations, where will each firm locate?

(d) Assume that the south suburb has enacted an incentive package to attract new business. Any firm that locates south of the city will receive a subsidy of $2,000 per day. Redraw the payoff matrix to include the subsidy.

# APT 2009 (Form B)

3. Two interdependent bus companies—City Wheels and Easy Ride—provide transportation services in the same city. Following a change in costs that affects both companies, each company must decide whether to lower its fare or maintain its current fare. In the payoff matrix below, the first entry in each cell indicates the daily profit to Easy Ride and the second entry indicates the daily profit to City Wheels. Both companies know all of the information in the matrix.

|  | City Wheels | |
|---|---|---|
|  | **Maintain Fare** | **Lower Fare** |
| **Maintain Fare** | $150, $180 | $130, $120 |
| **Lower Fare** | $120, $130 | $140, $110 |

(Easy Ride labels the rows: Maintain Fare, Lower Fare)

(a) If Easy Ride chooses to maintain its current fare, which strategy is better for City Wheels? Explain.

(b) Is there a dominant strategy for Easy Ride? Explain.

(c) Assume that the companies must make their decisions simultaneously and do not cooperate. What will be the daily profit for each firm?

(d) If these two firms could cooperate, which strategy would each firm choose?

(e) Suppose that the local government decides to provide a subsidy of $40 per day to the bus companies. However, only a company that agrees to lower its fare is eligible to receive the subsidy. Draw a new payoff matrix to reflect the change in government policy.