MANUFACTURING ENGINEERING TRIPOS

PART II

Thursday 22 April 2010 9 to 12

PAPER 2

Answer not more than **four** questions.

Answer each question in a separate booklet.

All questions carry the same number of marks.

The approximate percentage of marks allocated to each part of a question is indicated in the right margin.

There are no attachments.

STATIONERY REQUIREMENTS 8 page answer booklet x 4

Rough work pad

SPECIAL REQUIREMENTS

Engineering Data Book

CUED approved calculator allowed

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

- 1 (a) Define and discuss the concept of manufacturing strategy. [30%]
- (b) Compare and contrast the *market-based view* and the *resource-based view* of manufacturing strategy. [40%]
- (c) Describe and discuss the Mintzberg model of deliberate and emergent strategies. To what extent do realised strategies consist of pure deliberate or pure emergent strategies? [30%]
- 2 (a) Briefly outline what guidance principles such as *life cycle analysis*, *systems thinking*, and *closed loop processes* give to manufacturing industry as it moves towards more sustainable practices. [30%]
- (b) Illustrate the application of such principles using examples from three different industry sectors. In each case explain how the principles are applied, and discuss their value in improving sustainable practice. [70%]
- 3 The process of managing innovation in a manufacturing company, from an early idea to a new product reaching the market, is often visualised as a funnel.
 - (a) In this context, explain what is meant by:
 - (i) the fuzzy front end of innovation; [10%]
 - (ii) incremental innovation; [10%]
 - (iii) radical innovation; [10%]
 - (iv) the Kano model. [10%]
- (b) Describe how the management and activities of this process could change as an idea progresses through the funnel to become a marketable new product. [40%]
- (c) Discuss what impact the implementation of *open innovation* concepts might have on this process. [20%]

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- 4 The term *innovative young firms* is commonplace and reflects an assumption that innovations are frequently associated with new enterprises.
- (a) Explain, with examples, how the characteristics of the young firm might be an advantage in this respect. [40%]
- (b) Discuss the challenges for the managers of an established business trying to engender an entrepreneurial approach within their organisation. How might these challenges be addressed? [60%]
- Non-hostile acquisitions are expected to be beneficial for both the acquired and the acquiring organisations. Despite this, those involved on both sides often report disappointment with the outcomes.
- (a) Describe typical factors that might motivate acquisition for the board of management making the decision: [30%]
 - (i) for the acquiring organisation;
 - (ii) for the acquired organisation.
- (b) Discuss how differences in these motivations might explain the perceived failure to meet expectations. [30%]
- (c) What are the most important issues that need to be addressed by those considering making such an acquisition? What measures might minimise the chance of disappointment? [40%]

Illustrate and substantiate your answers as appropriate, with examples drawn from the course or elsewhere.

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- 6 (a) Briefly describe the different stages of the *adoption life cycle* model (also known as the *market life cycle* curve) and how this model helps a marketing manager understand different buyer needs. [25%]
- (b) What key marketing issues are typically faced by a high-tech company when launching new products? [25%]
- (c) The cumulative *adoption life cycle* curve and the *technology evolution* curve are both *S-curves*. Discuss what relationships may exist between these two curves. [25%]
- (d) From a marketing perspective, what are the key differences between launching a new technology into a new market and launching a mature technology into a new market? [25%]

END OF PAPER