

MANUFACTURING ENGINEERING TRIPOS PART IIB

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Thursday 25 April 2013 9 to 12

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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) Describe, with examples where appropriate, the main stages in the development of a new product for a start up company. [40%]

(b) What factors might need to be considered in the development of a business strategy for a new company? [30%]

(c) What different business strategic options might be available to small start up companies and large multinational businesses? [30%]

2 (a) What information would you need to develop a robust brand strategy for a business? [30%]

(b) How might the manufacturing strategy be influenced by the characteristics of the product and the brand? [40%]

(c) What aspects of national industrial policy might impact on companies' manufacturing strategies and in what ways? [30%]

3 (a) Discuss with examples, the key problems that can arise when two businesses enter into a Joint Venture. [50%]

(b) Discuss the factors that are important in determining the effectiveness of Joint Venture partnerships between organisations? Explain how these factors enable parties to successfully overcome the problems discussed in part (a). [50%]

4 (a) List five core technology management processes. Describe examples of the activities that typically take place within each. [30%]

(b) (i) Sketch the key features of a typical technology road map.

(ii) Describe the process of the development of a technology road map.

(iii) Discuss how additional management tools can be used to support the development of the technology road map.

(iv) Discuss the interplay between *technology intelligence* activities and the development of a technology road map. [70%]

5 (a) Describe five key challenges of innovation management. [20%]

(b) Explain the differences between *open innovation* and *closed innovation*. Use examples from industry to illustrate your answer. [40%]

(c) From the perspective of a small, technology-intensive firm, discuss the benefits and challenges of implementing a licensing-based exploitation strategy. [40%]

6 (a) Explain how changes to our understanding of the planet's environment over the last 40 years have led to pressure on industrial systems. Illustrate your answers with specific examples from industry. [30%]

(b) For some manufacturers the increased emphasis on environmental performance can be viewed as a positive opportunity. Describe strategies that could be used to exploit this opportunity. Give specific examples to support your answer. [30%]

(c) Explain how innovative business models can allow a company to internalise environmental impacts and enable economic and environmental success. Use examples from at least two businesses to illustrate your answer. [40%]

**END OF PAPER**