

**UNIVERSITI SAINS MALAYSIA**  
**First Semester Examinations**  
**Academic Session 1999/2000**

**September 1999**

**AGW702 TECHNOLOGY MANAGEMENT**

Time: [ 3 hours ]

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**Instructions:**

Please ensure that this examination paper consist of 2 printed pages before you begin.  
Answer **ANY FOUR (4)** questions.

1. How is resource-based theory of strategic management applicable to the management of technology? What are the weaknesses in this theory with respect to technology management?

(25 marks)

2. Schilling (1998)<sup>1</sup> discusses the concept of technological lockout. Describe this concept and the types of technological lockout. What factors influence the likelihood of finding a firm in a technological lockout situation?

(25 marks)

3. Why did Chiesa & Manzini. (1998)<sup>2</sup> argue that the traditional strategic management approach to formulating technology strategy is insufficient in a dynamic environment. Describe the model that they suggest for formulating technology strategy in an environment that is dynamic and continuously changing.

(25 marks)

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<sup>1</sup> Schilling, M.A. (1998) Technological lockout: An Integrative Model of Economic and Strategic Factors Driving Technology Success and Failure *Academy of Management Review*, 23, 267-284

<sup>2</sup> Chiesa, V. & Manzini, R (1998) Towards A Framework For Dynamic Technology Strategy, *Technology Analysis and Strategic Management*, 10, 111-129

4. The application of financial tools to evaluate technology decisions is problematic and often leads to the wrong answer; usually resulting in the under-valuation of technology (Boer, 1998)<sup>3</sup>. In what ways is the valuation of technology different from the valuation of ordinary physical and financial assets? Briefly explain the pitfalls of using traditional financial evaluation methods when evaluating technology decisions?

(25 marks)

5. You are the CEO of a high-tech company which is pursuing technological innovation as part of your competitive strategy. How would you develop a culture for innovation and describe the three types of culture (as discussed in Frohman<sup>4</sup>) to avoid?

(25 marks)

6. What unique characteristics differentiate small businesses from larger ones? How do these characteristics influence or shape the innovation and technology management in small businesses?

(25 marks)

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<sup>3</sup> Boer F. P. (1998) Traps, Pitfalls and Snares in the Valuation of Technology *Research Technology Management* 41, 45-54

<sup>4</sup> Frohman, A.L. (1998) Building a Culture for Innovation *Research Technology Management* 41, 9-12