

UNIVERSITY OF PORTSMOUTH

FACULTY OF TECHNOLOGY

Department of Electronic and Computer Engineering

M528 – Electronics Manufacturing

U09167

Date: 2 June 2008

Time: 09:00 – 10:30

INSTRUCTIONS

Write your student ID number clearly on page 2.

Write your answers to all 5 questions in this examination paper.

For each question, indicate your answer to **part A** by placing an “X” in the box next to the appropriate terms on the answer sheet. For each question, write your answer to **part B** by writing in the appropriate space in this examination paper.

Handwritten notes are permitted with this examination.

Calculators permitted are:

Casio FX 85WA

Casio FX 83WA

Casio FX 85MS

Examiner:

Professor Ron Pethig, Chi Nguyen

Student ID Number

QUESTION 1A. Place an "X" in the box next to **3 terms** that are most directly related to the **evolution of methods for the production of goods.** [6 Marks]

<input type="checkbox"/>	liability	<input type="checkbox"/>	subscription
<input type="checkbox"/>	capital	<input type="checkbox"/>	craftsman
<input type="checkbox"/>	factory	<input type="checkbox"/>	taylorism
<input type="checkbox"/>	exchange	<input type="checkbox"/>	fordism
<input type="checkbox"/>	government	<input type="checkbox"/>	guild

QUESTION 1B. Use all of the terms you selected in question 1A to **compare 3 different methods for the production of chairs.** Provide **one advantage for each method** and **explain which method would produce the most durable chairs.** [14 Marks]

QUESTION 2A. Place an "X" in the box next to **3 terms** that are most directly related to **options for buffering variability in a supply chain.** [6 Marks]

<input type="checkbox"/>	time	<input type="checkbox"/>	management
<input type="checkbox"/>	components	<input type="checkbox"/>	distribution
<input type="checkbox"/>	schedules	<input type="checkbox"/>	capacity
<input type="checkbox"/>	inventory	<input type="checkbox"/>	materials
<input type="checkbox"/>	paths	<input type="checkbox"/>	batches

QUESTION 2B. Use all of the terms you selected in question 2A to describe **3 possible methods to buffer the variability in the supply chain for the Nintendo Wii** during a promotional sale period. Explain **which method would have the most business risk.**

[14 Marks]

QUESTION 4A. Place an "X" in the box next to **3 terms** that are most directly related to **possible benefits** of the design principle "**maintain independence of functional requirements**". **[6 Marks]**

<input type="checkbox"/>	better for embedded use	<input type="checkbox"/>	modular design
<input type="checkbox"/>	better for children to use	<input type="checkbox"/>	more technology
<input type="checkbox"/>	reduce weight	<input type="checkbox"/>	mass market appeal
<input type="checkbox"/>	reduce maintenance	<input type="checkbox"/>	flexible customization
<input type="checkbox"/>	reduce critical failures	<input type="checkbox"/>	flexible packaging

QUESTION 4B. For **each of the 3 benefits** selected in question 4A, propose a **possible design for improving a mobile phone or a video game console** by applying the principle "maintain independence of functional requirements". **[14 Marks]**

QUESTION 5A. Place an "X" in the box next to **3 terms** that are most directly related to the typical **life cycle of an electronic product**. **[6 Marks]**

<input type="checkbox"/>	engineering	<input type="checkbox"/>	advertisement
<input type="checkbox"/>	warehousing	<input type="checkbox"/>	consumption
<input type="checkbox"/>	prototyping	<input type="checkbox"/>	valuation
<input type="checkbox"/>	white box	<input type="checkbox"/>	shipping
<input type="checkbox"/>	black box	<input type="checkbox"/>	sales

QUESTION 5B. For **each of the 3 product life cycle stages** selected in question 5A, propose **a method for reducing the environmental impact of televisions**. **[14 Marks]**