



**UNIVERSITI TUN HUSSEIN ONN
MALAYSIA**

**PEPERIKSAAN AKHIR
SEMESTER II
SESI 2009 / 2010**

NAMA MATA PELAJARAN : KEJURUTERAAN SEREMPAK
DAN BALIKAN

KOD MATA PELAJARAN : BDD 4053

KURSUS : 4 BDP

TARIKH PEPERIKSAAN : APRIL/MEI 2010

JANGKAMASA : 2 JAM 30 MINIT

ARAHAN : JAWAB **TIGA (3)** SOALAN
DARIPADA BAHAGIAN A DAN
SATU (1) SOALAN DARIPADA
BAHAGIAN B

KERTAS SOALAN INI MENGANDUNGI EMPAT (4) MUKASURAT BERCETAK

BAHAGIAN A : JAWAB TIGA (3) SOALAN DARIPADA BAHAGIAN INI.

SECTION A : ANSWER THREE (3) QUESTIONS FROM THIS SECTION.

- Q1** (a) In an effort to reduce time to market, foster teamwork, cut costs and eliminate late engineering changes, managers in many organizations have redefined their role in the context of a new paradigm. By describing their relative affinities, explain the differences between “push” and “pull” factors for a new paradigm?
(8 marks)
- (b) Describe **FOUR (4)** major factors that determine the nature of an enterprise business operation and distinguish them from their competitors.
(8 marks)
- (c) Explain the concept of balancing in manufacturing in the context of robust technology development.
(9 marks)
- Q2** (a) Concurrent engineering (CE) provides a way to bring the product for the marketplace early. Consider the case of an automobile manufacturer which chooses to defer a planned introduction of a three year automobile into the marketplace half a year late due to a major safety recall campaign. Illustrate using appropriate graph the predicted revenue loss due to a delayed market entry.
(8 marks)
- (b) Describe the way “future cost locked-in at any stage” and “total cost actually incurred” change if the CE tactics were applied from the onset of the program.
(8 marks)
- (c) If a company is six months late in switching to a new technology into a product, what impact would it have on the company competitiveness, market share, and Total Profit Margin (TPM).
(Assume both S-curves have 3 years useful life. Each S-curve has four segments with 30 degrees, 90 degrees, 60 degrees and 30 degrees slopes. Each segment is of equal length.)
(9 marks)

- Q3.** (a) Challenging past practices and excuses involves, to a large extent, understanding the source of waste. Describe using appropriate example **FOUR (4)** different types of waste and rework that are commonly found in a manufacturing environment. (8 marks)
- (b) Compare the elements of logistics integration among the four (4) major types of manufacturing traits:
- (i) craft,
 - (ii) mass,
 - (iii) lean,
 - (iv) agile.
- (8 marks)
- (c) Explain the roles enterprise modelling or value-added analysis play in satisfying the technological and social aspects of the work environment (3 marks)
- (d) Describe **THREE (3)** key elements of change management methodology. (6 marks)
- Q4.** (a) Early problem discovery and decision making are among the fundamentals of Concurrent Engineering (CE). Name **TWO (2)** other fundamental principles. (2 marks)
- (b) In the context of knowledge leveraging, explain the role of virtual manufacturing and common digital product/process models in enhancing manufacturing competitiveness. (6 marks)
- (c) By reducing the number of interfaces between sources, organization can save time and reduce costs. Explain **TWO (2)** means of minimizing each type of interfaces below.
- (i) product interfaces,
 - (ii) process interfaces
- (8 marks).
- (d) Discuss **THREE (3)** important requirements for effective virtual communication between concurrent collaborative team members. (9 marks)

BAHAGIAN B : JAWAB SEMUA SOALAN DARIPADA BAHAGIAN INI.

SECTION B : ANSWER ALL QUESTIONS FROM THIS SECTION

Q5. The generic process of reverse engineering is divided into three phases: scanning, point processing and application specific geometric model development.

- (a) List and briefly explain **FOUR (4)** reverse engineering strategic considerations to be made before initiating reverse engineering activities.

(9 marks)

- (b) Scanners or digitizers can be in the form of contacting and non-contacting instruments. Specifications for selecting appropriate technologies include volume, accuracy and speed. Using appropriate example, discuss and compare the following scanning technologies.

- (i) Analogue sensing with scanning probes
- (ii) Point-to-point sensing with touch-trigger probes
- (iii) Laser triangulation
- (iv) Computerized tomography (CT)

(16 marks)