UNIVERSITI TUN HUSSEIN ONN MALAYSIA

PEPERIKSAAN AKHIR
SEMESTER II
SESI 2009/2010

NAMA MATA PELAJARAN	:	REKABENTUK BERBANTU KOMPUTER DAN PEMBUATAN
KOD MATA PELAJARAN	:	BDD 4023
KURSUS	:	4 BDD
TARIKH PEPERIKSAAN	:	APRIL/MEI 2010
JANGKA MASA	:	2 ½ JAM
ARAHAN	:	JAWAB **LIMA (5)** SOALAN SAHAJA DARIPADA **TUJUH (7)** SOALAN.

KERTAS SOALAN INI MENGANDUNGI **LIMA (5)** MUKA SURAT

Q1 (a) In today's millennium era of manufacturing industry, computer plays an important role in each department/section. Explain the computer's role in each department such as in administration, shop floor, quality section, production, design department and also explain how each department relates to one another. You may use diagram to support your answer.

(5 marks)

(b) Explain the sequence of product life cycle in conventional and in computerized manufacturing environments. You may use diagram to support your answer.

(5 marks)

(c) Explain briefly the activities of CAD.

(5 marks)

(d) Explain briefly the activities and application of CAM.

(5 marks)

Q2 (a) **FIGURE Q2** (attachment 1) shows a drawing of a poppet valve. Sketch how this valve could be represented using CADCAM system using the following modeling types:

(i) wire frame modeling

(ii) surface modeling.

(10 marks)

(b) There are two approaches to create solid model which are primitives and features. By using diagram to support your answer,

(i) Define primitives and define features

(ii) Compare between primitives and features

(10 marks)

Q3 (a) Explain briefly why the communication standards in CADCAM system are considered very important.

(4 marks)

(b) Basically there are two types of translator used in CADCAM standard communications. Compare the two types of translators. You may use diagram to support your answer.

(6 marks)

(c) Explain the format and structure of IGES.

(6 marks)

(d) Why the STEP standard has been developed to replace the IGES standard.

(4 marks)

Q4 (a) Data model is one part of the conceptual design process whereby it focuses on what data should be stored and how data is processed.

(i) In order to begin constructing the basic data model, what are the information need to be gathered by modelers.

(ii) Give two examples of data model. You may use diagram to support your answer.

(10 marks)

(b) In a CAD program system, model is represented by using the concept of object orientation.

(i) Classify and define the concept of object orientation model (OOM).

(ii) Compare between OOM and object orientation programming (OOP).

(10 marks)

Q5 (a) Sketch and name **THREE (3)** features and **TWO (2)** subfeatures that can be found in a product.

(5 marks)

(b) Elaborate on the reasons why it is necessary for a process planner to have an extensive manufacturing experience.

(5 marks)

(c) Briefly describe the **TEN (10)** steps involved in preparing a process plan.

(10 marks)

Q6 (a) List **TEN (10)** advantages that modern Numerical Control machines have over older, manually operated machines

(10 marks)

(b) Even though Numerical Control machines offer a lot of advantages, manually operated lathes and milling machines still have important roles in the training of engineers. Why are they still important?

(5 marks)

(c) Rearrange the following codes so that machining process can be done to drill a hole in a block of material in the right sequence. The drill bit will brought close to the block from initial position X0,Y0,Z0. After drilling, the drill bit will be returned to the initial position.

G00 Z.1 M09
G54 G90 S600 M03
G91 G28 X0 Y0 Z0
G01 Z-.75 F3.5
M30
G00 X1.0 Y1.0
G43 H01 Z.1 M08

(5 marks)

Q7 (a) Briefly explain the tasks of every single layer of the Open System Interconnection's seven Local Area Network layers.

(9 marks)

(b) Compare between unshielded twisted pair cables and fibreoptic cables.

(4 marks)

(c) What are the common functions of a hub and a switch? How do they differ?

(7 marks)

Attachment

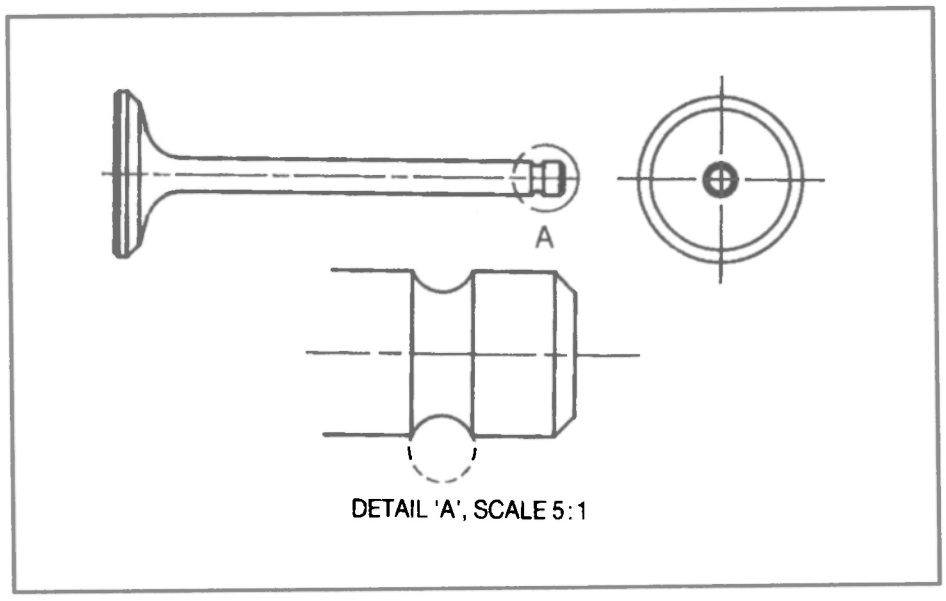

FIGURE Q2