UNIVERSITI TUN HUSSEIN ONN MALAYSIA

PEPERIKSAAN AKHIR
SEMESTER II
SESI 2010/2011

NAMA KURSUS	:	REKABENTUK BERBANTU KOMPUTER DAN PEMBUATAN
KOD KURSUS	:	BDD 4023
PROGRAM	:	SARJANA MUDA KEJURUTERAAN MEKANIKAL DENGAN KEPUJIAN
TARIKH PEPERIKSAAN	:	APRIL / MEI 2011
JANGKA MASA	:	2 ½ JAM
ARAHAN	:	JAWAB **LIMA** SOALAN SAHAJA DARI ENAM SOALAN YANG DISEDIAKAN.

KERTAS SOALAN INI MENGANDUNGI LIMA (5) MUKA SURAT

Q1 (a) Give THREE (3) advantanges and THREE (3) disadvantages using computer aided design (CAD) compare using conventional design.

(6 marks)

(b) Explain in detail FIVE (5) reasons how CAD/CAM can improve the productivity of manufacturing industry.

(9 marks)

(c) Define CAD system and explain the relationships between geometry modelling and application of CAD system.

(5 marks)

Q2 (a) What is the meaning of the term modelling representation below:

(i) Constructive Solid Geometry (CSG)
(ii) Boundary Representation (B-rep)

(8 marks)

(b) List and sketch THREE (3) types of geometric model when designing a product.

(6 marks)

(c) Explain each of the surface modeling below, with an example.

(i) Revolute surface
(ii) Ruled surface
(iii) Coon surface

(6 marks)

Q3 (a) List SIX (6) sections of IGES standard and briefly explain.

(6 marks)

(b) Explain how CAD information is transferred between two different CAD systems. Please provide your answer with the aid of diagram.

(6 marks)

(c) Explain in detail various concept of object orientation in data storage of CAD/CAM system.

(8 marks)

Q4 (a) Most of Group Technology (GT) is applied in Computer Aided Prosess Planning (CAPP).

(i) Explain the essential features of group technology
(ii) What are the methods available to group parts into families?

(5 marks)

(b) List the process sequence of process planning of the product given in Figure Q4.

(8 marks)

(c) Present into detail the most significant output of CAPP. Please provide your answer with the aid of diagram.

(7 marks)

Q5 (a) Define the term Numerical Control (NC) and explain the function of a part program

(4 marks)

(b) With the aid of suitable diagrams explain the following NC motion control systems :

(i) Point-To-Point
(ii) Continous path / contouring
(iii) Interpolation

(7 marks)

(c) An extract from a part program reads as follows ;

SECTION 1	SECTION 2	SECTION 3
N05	G00 X60 Y30 Z-8	M03

(i) Explain the general function of each section in the part program
(ii) Pick any two of the above mentioned section and explain their meaning.

(9 marks)

Q6 (a) Most major components in manufacturing system need the aid of communication.

(i) Give FOUR (4) reasons, the need of communication in manufacturing system.

(ii) Give TWO (2) types of communication needed in manufacturing system.

(4 marks)

(b) List the basic hardware components of communication and explain about their functions.

(6 marks)

(c) Explain the hardware technology below, that is used to connect the individual device into the networking communication in manufacturing system :

(i) Optical fiber
(ii) Ethernet
(iii) Wireles LAN
(iv) Power line communication

(10 marks)

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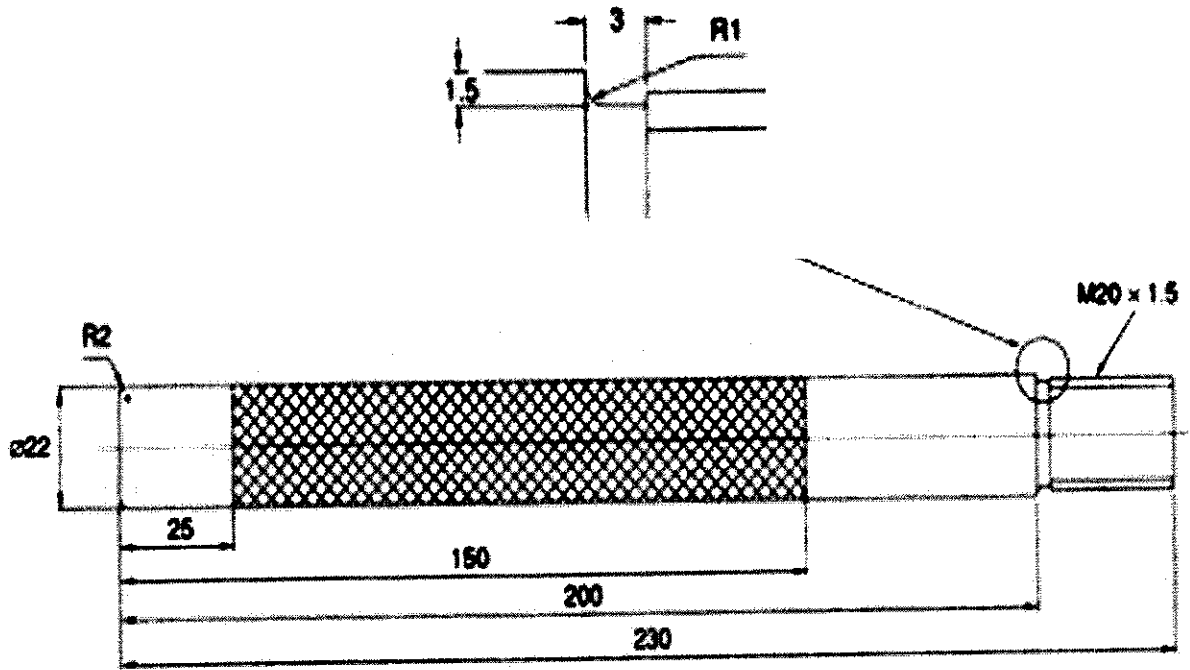   KOMPUTER & PEMBUATAN

FIGURE Q4