Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2013/2014

COURSE NAME	:	COMPUTER AIDED DESIGN AND MANUFACTURING
COURSE CODE	:	BDD 4023 / BDD40203
PROGRAMME	:	BACHELOR'S DEGREE OF MECHANICAL ENGNEERING WITH HONOUR
EXAMINATION DATE	:	DECEMBER 2013/JANUARY 2014
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FOUR** (4) PAGES

Q1 (a) Explain how the devices can communicate with each other.

(2 marks)

(b) Discuss the given layers involved in Open System Interconnection (OSI) for network communication.

(i) Presentation layer
(ii) Application layer
(iii) Network layer

(6 marks)

(c) Propose and explain **FOUR (4)** methods that can be used as a network topology to communicate and integrating all systems in the manufacturing plant.

(12 marks)

Q2 (a) What is meant by Group Technology?

(2 marks)

(b) Explain the following major issues in the construction of a coding system:

(i) part (component) population
(ii) code detail
(iii) code structure, and
(iv) digital representation

(8 marks)

(c) As a manufacturing engineer in the multinational company, you are required to develop a system for Group Technology (GT) to reorganized the machine tools using Production Flow Analysis (PFA).

(i) Develop the complete procedures that should be adopted in PFA
(ii) Explain the function of route sheet form in PFA

(10 marks)

Q3 (a) Distinguish between EIA and ISO coding system in numerical control (NC).

(2 marks)

(b) Compare the open loop and closed loop system of NC system.

(6 marks)

(c) The component shown in **Figure Q3(c)** is to be machined on a CNC machining center. Develop a CNC program using G90 and G91 coordinate system for that component. The end mill diameter of 10 mm, depth of cut of 2 mm depth, cutting speed of 100 m/min and feed rate of 300 mm/min should be employed in the program.

(12 marks)

Q4 (a) Compare between Initial Graphics Exchange Specification (IGES) and Standard for the Exchange of Product Model Data (STEP).

(8 marks)

(b) Briefly explain the requirements for the data exchange in CAD/CAM.

(4 marks)

(c) A drawing interchange format (DXF) files were originally developed to give users flexibility in managing data and translating CAD drawings into file formats that could be read and used by other CAD/CAM systems. Discuss **FOUR (4)** sections that involved in the DXF.

(8 marks)

Q5 (a) Explain the differences in Terms and Concept Analogies between Object Oriented and Traditional Programming.

(5 marks)

(b) Discuss each of these models in Object Oriented Modeling system.

(i) Object model
(ii) Dynamic model
(iii) Functional model

(9 marks)

(c) Differentiate between Library Class Hierarchy and User Class Hierarchy.

(6 marks)

- END OF QUESTION –

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SEMESTER/SESSION: SEM I/2013/2014 PROGRAMME : 4BDD
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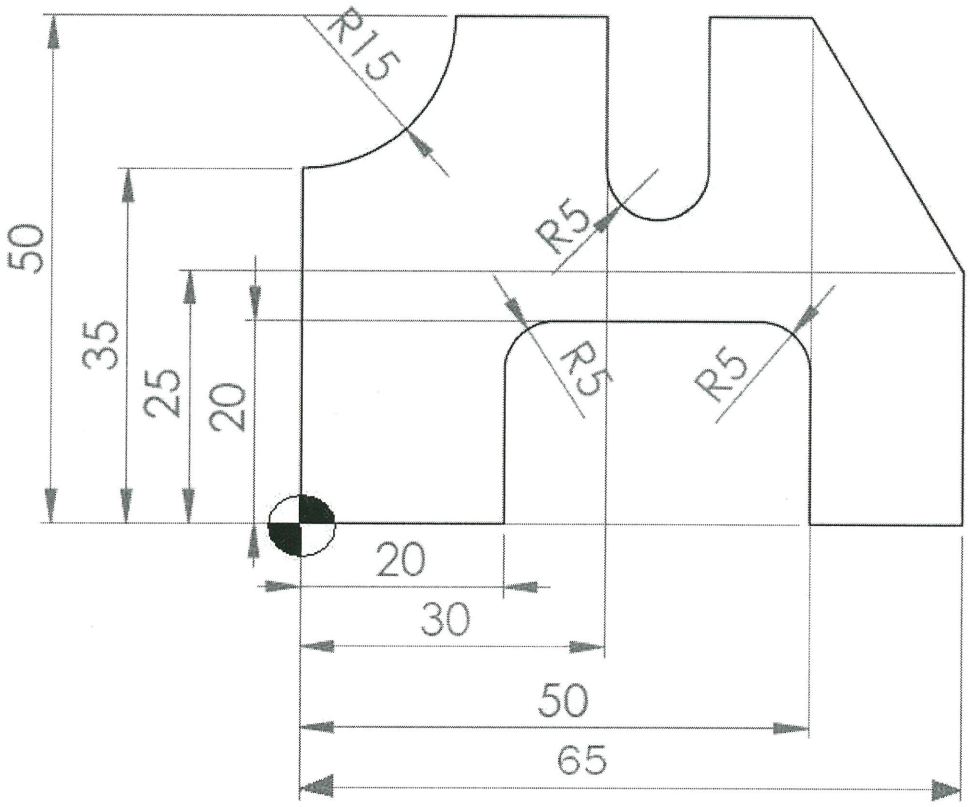

All dimensions are in millimeter (mm)

FIGURE Q3(c)