Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2022/2023

COURSE NAME	:	PRODUCTION PLANNING AND CONTROL
COURSE CODE	:	BNM 30803
PROGRAMME CODE	:	BNM
EXAMINATION DATE	:	JULY / AUGUST 2023
DURATION	:	3 HOURS
INSTRUCTION	:	1. ANSWER **ALL** QUESTIONS
		2. THIS FINAL EXAMINATION IS CONDUCTED VIA **CLOSED BOOK**
		3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

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

Q1 (a) List **TWO (2)** dimensions by which customers may evaluate the desirability of buying product or services from a producer.

(2 marks)

(b) Differentiate **THREE (3)** criteria between order qualifiers and order winners in the process of buying product or services.

(6 marks)

(c) **Table Q1 (c)** describes the operations of car door panels at Furano Manufacturing Sdn. Bhd. The Engineering & Technical (E&T) team of the company has been assigned to study and explore the opportunity for improvement of processing and assembly operations towards providing significant input to Master Production Schedule (MPS). As a team member of E&T of the company, you are required to:

(i) Construct a process plan using flow chart to represent the operations of car door panels.

(8 marks)

(ii) Interpret **THREE (3)** suggestions for the improvements of Value-Added Time (VAT) for the operations of car door panels.

(9 marks)

Q2 (a) Differentiate between a gross requirement plan and a net requirement plan in resource planning.

(4 marks)

(b) Obihiro Enterprise is a small company that produces net pots for hydroponic systems. The manager of the company intends to upgrade the business by implementing the automation and integration processes for supply chain management using Enterprise Resources Planning (ERP). As an engineer at the company, identify **FOUR (4)** limitations of using ERP in a small company to be presented to the manager.

(8 marks)

(c) A Bill of Materials (BOM) for a door handle-A is comprised of a base-B, 2 springs-C, and 4 clamps-D. The base-B is assembled from a clamp-D and 2 housings-E. Each clamp-D has a grip-F and a casing-G. Each housing-E has 2 bearings-H and a shaft-I.

(i) Construct a complete product structure of a door handle-A.

(5 marks)

(ii) Compute the net quantities needed for each component to assemble 50 door handles-A, if there are 25 bases-B and 100 clamps-D in stock.

(8 marks)

Q3 (a) Explain the role of Production Activity Control (PAC) in a production planning and control.

(2 marks)

(b) Mr Kobayashi discovered delays in several delivery last month, indicating that his company did not successfully satisfy customers' order. Outline **FOUR (4)** possible corrective actions that he can propose to the operation so that the same problem will not occur in the future.

(8 marks)

(c) **Figure Q3 (c)** shows a network diagram for a project that needs to be completed by Asahikawa Construction Corporation.

(i) Identify the critical path of this project.

(11 marks)

(ii) Identify the critical activities and completion time for the critical path calculated in **Q3 (c) (i)**.

(4 marks)

Q4 (a) Describe the relationship between lean and quality in the production system.

(6 marks)

(b) State **THREE (3)** common information written on the Kanban card.

(3 marks)

(c) Chitose LED Manufacturing Sdn. Bhd. is planning to implement a Just-In-Time (JIT) concept through Kanban system using containers to reduce the inventory level. The details of the production data in the assembly line are inclusive of set up cost = RM15, holding cost = RM150 (per unit per year), daily production = 1250 units per day, annual demand = 125000 units (with daily usage of 1125 units), manufacturing lead time = 4 days, and safety stock = 4 days of production.

(i) Calculate the size of Kanban container.

(8 marks)

(ii) Calculate the number of Kanban container.

(8 marks)

- END OF QUESTIONS -

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Table Q1 (c)

No	Operations	Time (Minutes)	Distance (Meter)
1	Sheet metal in Warehouse Dept.	-	-
2	Transfer sheet metal to Fabrication Dept.	2	10
3	Bending and stamping process	10	-
4	Proceed to door panels assembly	1	5
5	Door panels assembly	15	-
6	Proceed to labelling	1	5
7	Labelling	5	-
8	Move to Warehouse Dept.	2	10

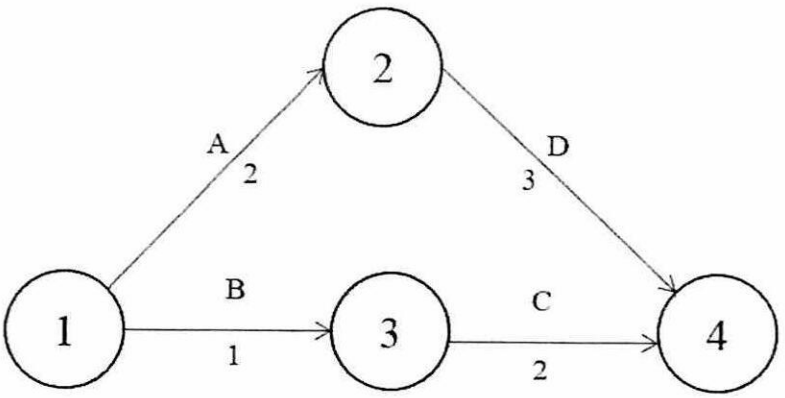

Figure Q3 (c)