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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION

SEMESTER II  
SESSION 2022/2023

COURSE NAME : FURNITURE MANUFACTURING AND  
PROCESS

COURSE CODE : BPP 30703

PROGRAMME CODE : BPP

EXAMINATION DATE : JULY/AUGUST 2023

DURATION : 3 HOURS

INSTRUCTION : 1. ANSWERS **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

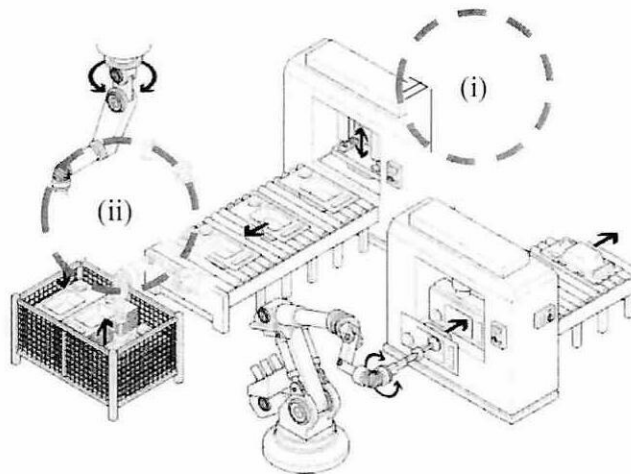
THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

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**TERBUKA**

- Q1** (a) Explain layout planning for the essentials of furniture manufacturing. (3 marks)
- (b) Differentiate **TWO (2)** phases of manufacturing process. (8 marks)
- (c) Outline **TWO (2)** departments of production processes with explanation. (8 marks)

- Q2** (a) Explain name of common device in automated production based on the description below,  
 Power enables performing manufacturing and material handling operations by providing energy, consequently allowing machines to operate. (2 marks)
- (b) Differentiate **TWO (2)** advantages and disadvantages of these automation systems in manufacturing industry.  
 i. Production system  
 ii. Automated production system (9 marks)
- (c) Illustrate the section/unit positions for the automation system on (i) and (ii) of the automated assembly line with an explanation.



**Figure Q2: The automated assembly line**

(9 marks)

- Q3** (a) Describe **TWO (2)** components of simplest pneumatic system. (4 marks)
- (b) Sketch the pneumatic system diagram with labels. (6 marks)

- (c) Illustrate the combination of timer circuit with explanation. (9 marks)

- Q4** (a) Explain the type of custom made furniture design. (4 marks)

- (b) Outline **TWO (2)** consideration of prototype design challenges in furniture manufacturing process. (8 marks)

- (c) There are 3D printer filaments that are made up of PLA plastic mixed with wood fibers. While it is not 100% wood, it gives 3D prints a feel and a smell that reasonably replicates wood. The filament can be a bit temperamental to use as it is a composite material and is more delicate and more prone to breakage than pure plastic filament.

*(Source: Losaw, 2021)*

Based on the information above, conclude **THREE (3)** advantages of 3D prototyping process.

(12 marks)

- Q5** (a) While jigs and fixtures work together, these are two distinct tools used in mass production processes. The two terms are often used incorrectly as synonyms but serve different purposes.

*(Carr Lane Manufacturing, 2023)*

Explain jigs and fixtures for basic function of modern engineering.

(6 marks)

- (b) Illustrate **TWO (2)** steps of making a simple jigs and fixtures with explanation.

(12 marks)

- END OF QUESTIONS -