



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2021/2022**

**COURSE NAME : WOOD AND NON-WOOD MATERIAL**

**COURSE CODE : BPP 20603**

**PROGRAMME CODE : BPP**

**EXAMINATION DATE : JULY 2022**

**DURATION : 3 HOURS**

**INSTRUCTIONS :**

- 1. ANSWER ALL QUESTIONS.**
- 2. THIS FINAL EXAMINATION IS AN ONLINE ASSESSMENT AND 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**

**CONFIDENTIAL**

**TERBUKA**

- Q1** You are attending your internship at a small furniture manufacturing company located at Sri Gading, Johor. You are assigned to design few educational furniture for the kidnergarden. The company have a few carpentry workers, basic tools and equipments such as table saw, radial arm saw, jigsaw, handsaw, planner, cordless power drill, orbital sander, chisel set, work bench, clamps and standard fitting items. The existing inventory materials and specification available for educational furniture are limited as in **Table Q1**.

**Table Q1: Inventory materials**

Material	Size (Width x Length)	Thickness (mm)	Quantity
Pinewood	1' x 3'	32	100
Rubberwood	¼' x 3'	25	100
Utility plywood	3' x 6'	3	20
Medium density fibreboard (MDF)	4' x 8'	9	15
Melamine faced chipboard (MFC)	4' x 8'	25	7
Wood dowel	¼" x 1 ½"	-	50

- (a) Identify **ONE (1)** best material for the fabrication of educational furniture as stated in **Table Q1** for:
- (i) Table top
  - (ii) Stool leg
  - (iii) Chair seat
- (3 marks)
- (b) Justify the material selection in **Q1(a)**.
- (9 marks)
- (c) Sketch **TWO (2)** types of wood dowel working joints based on the existing tools in **Q1** with explanation.
- (8 marks)
- (d) Sketch **TWO (2)** wood joints for table top using rubberwood plank.
- (6 marks)
- Q2** (a) Identify **FOUR (4)** wood elements for particleboard manufacturing.
- (4 marks)
- (b) Explain the processes involved in material preparation of wood veneer and wood chip.
- (6 marks)



- (c) The kiln dryer machine of XYZ Hevea Sdn Bhd is not function due to the electrical failure. A tonne of rubberwood lumber need to be dried prior to the manufacturing of wooden stool.

Estimate **TWO (2)** probabilities that will occur when using green rubberwood lumber.

(6 marks)

- (d) Analyze **TWO (2)** contributing factors for plywood delamination.

(8 marks)

- Q3** (a) State **TWO (2)** commercial non-wood materials used in furniture.

(2 marks)

- (b) Explain **THREE (3)** characteristics of non-wood material.

(6 marks)

- (c) Propose **ONE (1)** suitable non-wood material for gazebo.

(8 marks)

- (d) Recommend **ONE (1)** oil palm residues for solid table top fabrication.

(8 marks)

- Q4** As a Production Supervisor in a shoe cabinet maker company, your team are asked to manufacture 100 units of 4-tie swing door cabinet using chipboard as in **Figure Q4**.



**Figure Q4: 4-tie swing door cabinet**

- (a) Explain **TWO (2)** common adhesives wood jointing for 4-tie swing door cabinet. (6 marks)
- (b) Sketch **TWO (2)** types of screw used in installation of **Figure Q4**. (8 marks)
- (c) Explain **SIX (6)** hardwares and fittings used as in **Figure Q4**. (12 marks)

**- END OF QUESTIONS -**