



**LEVEL 2 AWARD IN TIMBER AND PANEL PRODUCTS
AND THEIR USES (QCF)**

(Qualification Accredited Number: 600/5496/7)

**AWARD IN TIMBER AND PANEL PRODUCTS AND THEIR USES
AT SCQF LEVEL 5**

(Qualification Accreditation Number: R249 04)

TIMBER AND PANEL PRODUCTS AND THEIR USES

(Unit Accredited Numbers: D/503/9858 & UB40 04)

EXAMINATION PAPER AND ANSWER BOOK

November 2016

Candidate Number	
Date	
Centre Number	

Instructions to Candidates

- Please ensure you have written your candidate number in the box above.
- Your name must NOT appear anywhere on this answer book.
- This is a closed book examination.
- You are required to answer all questions.
- Write your answers in this answer book.
- If you need more space to complete a question, please use the spare page at the end of this answer book.

Examination Time: 1½ hours

Issued under the authority of the
PIABC WOOD ASSESSMENT BOARD
November 2016

You are required to answer ALL the questions on this paper

Learning Outcome 1
Understand the characteristics and nature of wood
(20 marks)

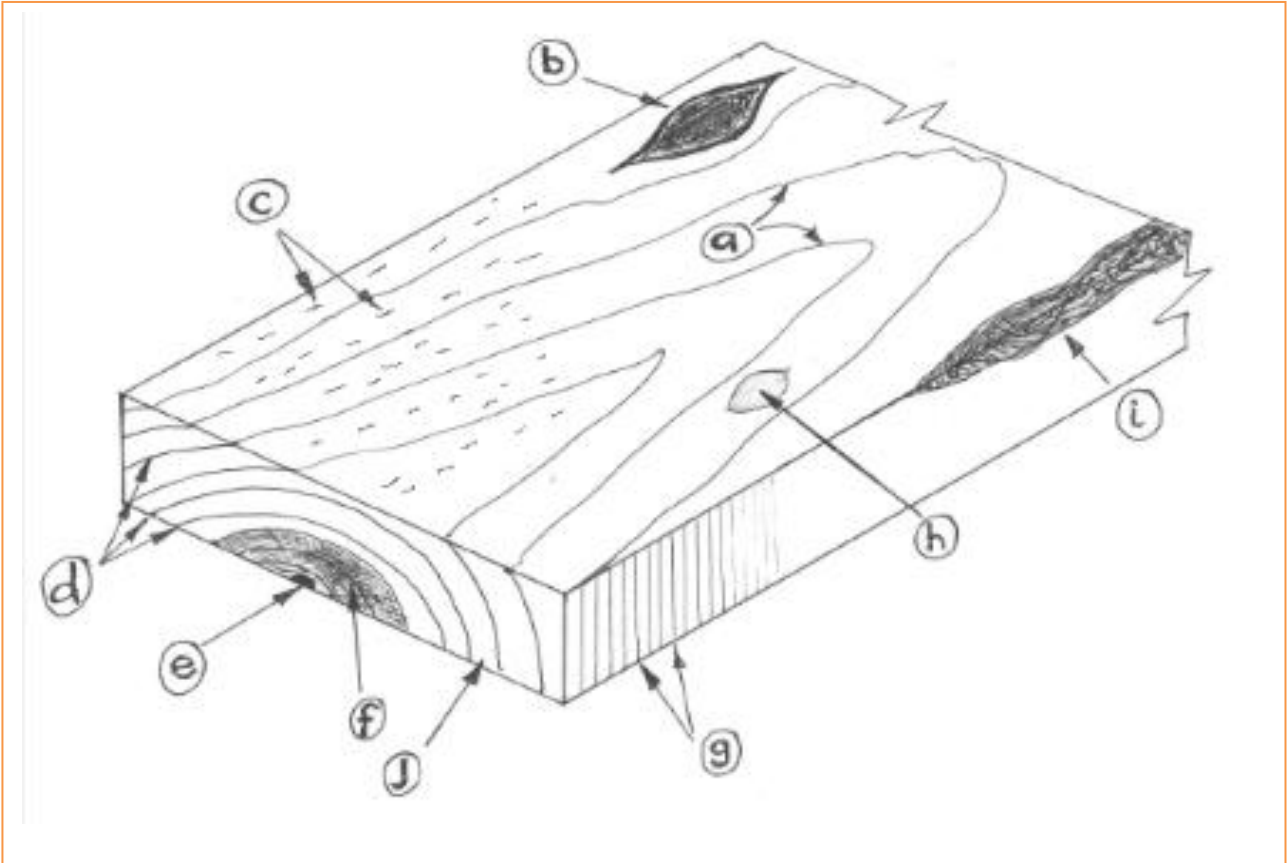
1. Name FOUR softwoods. (4 x 1 mark)

1.1	
1.2	
1.3	
1.4	

2. Tick whether the following statements are true or false. (2 marks)

Statement	True	False
All softwood timbers are soft and have knots		
Tropical timbers are available in red, brown and pale colours		
Most softwood trees produce needles		
Most hardwood trees produce leaves		

3. Name the characteristics/features shown below. (10 marks)



Name of characteristic/ feature	Answer (State letter)
Annual rings	
Band saw machine marks	
Rays	
Pith	
Dead knot	
Live knot	
Heartwood	
Sapwood	
Figure	
Waney edge	

4. Name TWO natural means by which timber can be attacked. (2 x 1 mark)

4.1	
4.2	

5. Name ONE temperate and ONE tropical timber. (2 x 1 mark)

Tropical	
Temperate	

Learning Outcome 2
Understand the factors affecting the marketing and utilisation of timber
(20 marks)

6. A floor requires:

- Twelve pieces at 1.7m long
- Two pieces 3.5m long

Assuming you have available standard metric lengths up to 4.8 m, what would you supply to meet the need most economically? (4 marks) Show all workings.

7. A customer asks for a length of timber 7' foot 6 inches long. What metric, stock length would you supply? (1 mark).

8. Timber suppliers often describe their stock sizes stating the thickness first followed by width, for example 50 x 100. However builders often state the width first, followed by the thickness. Suggest simple ways of preventing confusion. (1 mark)

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9. With regards to hardwoods, tick the THREE statements that are generally true. (3 marks)

Hardwoods can be sold	Tick
By weight	
In varying random widths and standard thicknesses	
Square or waney edged	
By log circumference	
Mostly available in lengths up to 20 meters (60 feet) long	
Mostly available in lengths up to 6 meters (20 feet) long	

10. Place the following grades into the table in order of quality (3 marks):

- Fifths
- U/S
- Sixths

Type/name	Best grade		Lowest Grade
Softwoods (Scandinavia and Baltics)			

11. Describe an end use for strength graded timber and an end use for appearance graded timber. (2 marks)

Type of grading	Example of end use
Strength graded	
Appearance graded	

12. Where would you find the Shipping Mark on a piece of European Red/Whitewood giving information on grade and mill? (1 mark)

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13. Give TWO examples of the main cross section sizes of sawn timber (further to the example given). (2 marks)

Eg	25 x 75
13.1	
13.2	

14. Describe what is meant by a veneer. (2 marks)

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15. Describe a boule stack. (1 mark)

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Learning Outcome 3
Understand the processes that improve the properties of wood
(20 marks)

16. State TWO reasons for drying timber. (2 marks)

16.1	
16.2	

17. State TWO advantages that Kiln drying has over Air drying. (2 marks)

17.1	
17.2	

18. State why timber is often acclimatised or conditioned to its end use situation – prior to installation. (2 marks)

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19. At what % moisture content is timber safe from fungal attack? (2 marks)

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20. Suggest suitable % moisture content for hardwood flooring having under floor heating. (2 marks)

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21. Other than pressure treatment and brush application state one other way in which timber preservative may be applied. (1 mark)

22. For each end use, tick your recommended timber treatment. (5 marks)

	End Use	No preservative treatment necessary	Pressure treated with Organic solvent	Pressure treated with copper based preservative	Brush applied boron
22.1	External door frame				
22.2	Remedial repair treatment to floor joist ends				
22.3	Architrave				
22.4	Fence post				
22.5	Tiling batten				

23. Explain why heartwood is not as prone to attack as sapwood. (2 marks)

24. Suggest a reason for the increased use of 'modified wood'. (2 marks)

Learning Outcome 4
Understand the types of wood-based panel products
(20 marks)

25. Complete the table below for each panel/sheet material. (9 marks)

	Description	Name of panel type	Common name	Timber used on face
25.1	A pale cream coloured sheet product used for furniture production	Plywood	Ply	
25.2	Veneered faces having a solid timber strips within the core. A Core Plywood		N/A	Birch, Far Eastern
25.3	A yellow coloured sheet product usually having wild figure.	Plywood	Ply	
25.4	A collection of thin timber strands bonded together. Surface strands usually parallel to the board length		OSB	N/A
25.5	A fibreboard, usually 3mm thick sheet with smooth brown surface and rough back face		N/A	N/A
25.6		Pegboard	Pegboard	N/A
25.7	Grey throughout. Brittle.		(CBP)	N/A
25.8	Consistently light brown throughout, no grain or figure.		MDF	N/A
25.9	Similar to MDF above, however using loosely compressed fibres and used as pin boards and insulation		N/A	N/A

26. For each plywood adhesive type, suggest a disadvantage. (2 marks)

	Name of adhesive	Advantage	Disadvantage
26.1	Phenol formaldehyde (PF)	Weather resistant adhesive	
26.2	Urea formaldehyde (UF)	Colourless	

27. Suggest why many particleboard panels have finer chips on the surface and larger chips in the centre. See photograph below. (1 mark)



28. Why is it usual for plywood to have an odd number of plies within their thickness? For example 5 ply, 9ply etc. (2 marks)

29. Some panel products are more suited to having their edge machine moulded.
Suggest a suitable type of sheet material and give reasons for your choice. (3 marks)

Example of a sheet material that lends itself to a machined moulded edge	Reasons for your suggestion

30. Laminated kitchen worktops are widely available using MDF, plywood and what other popular timber based, material. (1 mark)

31. Some laminated sheet materials have a 'balancing layer' on the back face. Suggest reasons for the layer. (1 mark)

32. Other than the adhesive, what else does the quality of marine plywood depend on? (1 mark)

Learning Outcome 5
Understand the functions and applications of solid timber and wood-based panels in buildings and related uses
(20 marks)

33. What is meant by 'carcassing' timber? (1 mark)

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34. Name the chipboard grade that is suitable for use in non-load bearing, humid conditions. (1 mark)

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35. Timber that has been visually graded is awarded one of two grades: GS or SS. What do these initials stand for? (2 marks)

35.1	GS	
35.2	SS	



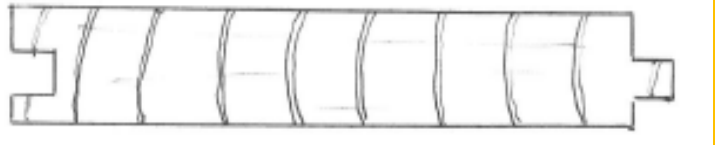
36. A customer specifies Strength Class C16 however you do not have it in stock. Which strength class are you able to offer as an (over-specified) alternative? (1 mark)

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37. List FOUR natural timber characteristics or features that would affect final strength. (Not caused by stacking faults). (2 marks)

	Characteristic
37.1	
37.2	
37.3	
37.4	

38. Complete the table, naming or sketching the end/section/profile shape. (5 marks)

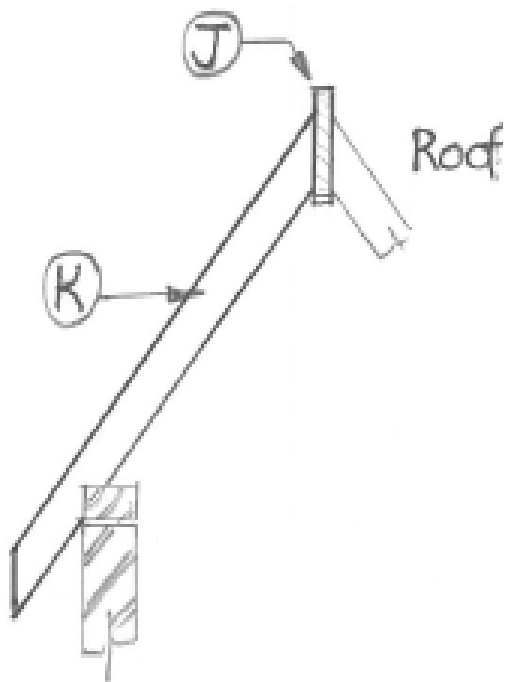
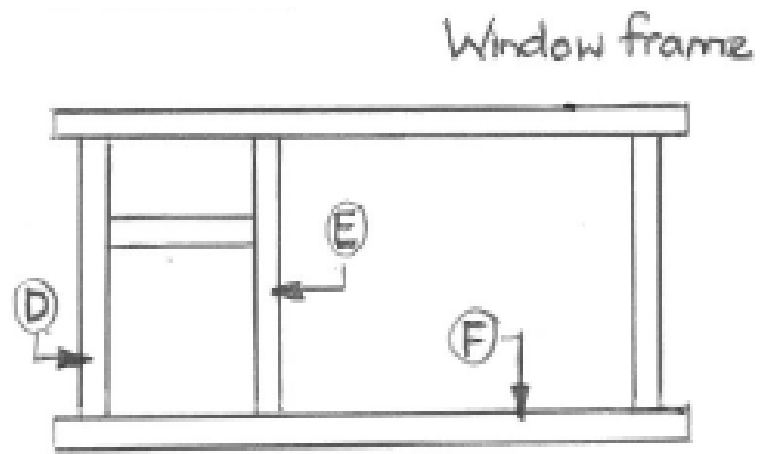
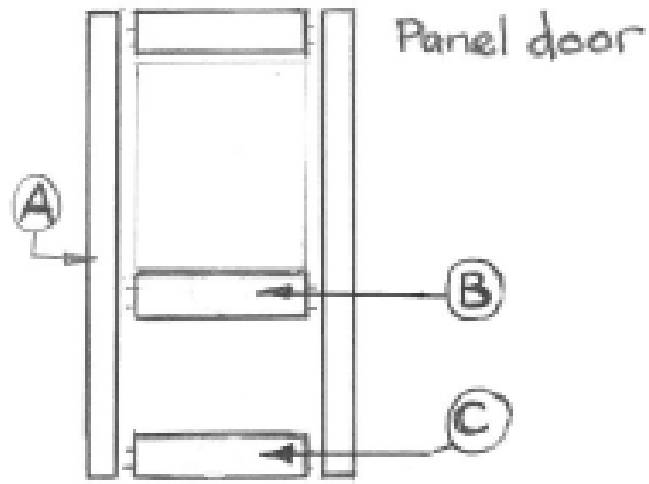
	Name of moulding/shape	Sketch of moulding
38.1	Dowel	
38.2	Quadrant bead	
38.5		
38.6		
38.7	----- and ----- floorboard	

39. Name FOUR load bearing members installed in a domestic dwelling. (2 marks)

	Load bearing members
39.1	
39.2	
39.3	
39.4	

40. Name **any SIX** components from any of the sketches below. (6 x ½ marks)

	Name of component (choose 6 only)
A	
B	
C	
D	
E	
F	
G	
H	
I	
J	
K	



Learning Outcome 6
Understand the importance of care, storage and handling of wood products
(20 marks)

41. Describe the Personal Protective Equipment (PPE) required whilst handling or working timber. Give a reason for the use of each PPE (8 x ½ marks)

	PPE	Reason/ working situation
41.1		
41.2		
41.3		
41.4		

42. Tick whether the following situations require 2 persons and/or mechanical aids when lifting and carrying goods short distances around site. (4 marks)

	Handling situation	Tick if two or more people are likely to be required (or mechanical aid)
42.1	Single lengths softwood architrave profiles	
42.2	Any load over 25 Kg	
42.3	A feeling of strain when assessing/attempting to lift	
42.4	2440 x 1220 x 25mm hardwood plywood sheet	
42.5	1x 2.1m length 100x50 whitewood joist	
42.6	6m span roof truss	

43. What are the reasons for using 'stickers' or 'piling sticks' in a wood stack? (2 marks)

44. Describe what happens after timber is installed into a building whilst its moisture content is higher than that of its final end use surroundings. (2 marks)

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45. Answer true or false to the following **general** statements. (6 marks)

	General statement	True	False
45.1	Pale coloured timbers are more susceptible to decay than dark coloured timbers		
45.2	Timber end grain can be wax sealed to control the rate of moisture loss and absorption		
45.3	Timber can warp due to strong sunlight		
45.4	Fence posts can be left outside whilst awaiting installation		
45.5	Tangentially cut, wide timber boards are more prone to cupping than radially cut boards		
45.6	Teak can be left untreated and kept outside if being used for exterior furniture		

46. Tick which faults/defects could be caused by poor site storage after delivery to site prior to installation. (4 x ½ marks)

		Tick if defect caused by inadequate site storage
46.1	Honeycombing	
46.2	Bowing	
46.3	Resin pockets	
46.4	Waney edge	
46.5	Sheet/panel warping	
46.6	Water stain	
46.7	Thunder shake	
46.8	Blown edges of MDF and chipboard panels	

Please use this page if you need more space for answering any question.

**Question
number**

Your answer