



7906-505 MARCH 2022

Level 2 Technical Certificate in Architectural Joinery

Level 2 Architectural Joinery – Theory exam

Monday 14 March 2022
13:30 – 15:30

You should have the following for this examination

- a multiple-choice answer sheet
- a pen with black or blue ink
- a non-programmable calculator

This question paper is the property of the City and Guilds of London Institute and is to be returned after the examination.

Read the following notes before you answer any questions

- You **must** use a pen with black or blue ink to complete **all** parts of the answer sheet.
- Check that you have the correct answer sheet for the examination.
- Check that your name and candidate details are printed correctly at the top of your answer sheet.
- Inform the invigilator if your name or examination details are not correct.
- Each question shows **four** possible answers (lettered 'a', 'b', 'c' and 'd'); only **one** is correct.
- Decide which **one** is correct and mark your answer on the **answer sheet** with your pen.

For example if you decide 'a' is correct, mark your answer like this

101	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Cancel	Cancel	Cancel	Cancel

If you want to change your answer, cancel your first choice by filling in the 'cancel' box below the circle like this

101	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Cancel	Cancel	Cancel	

Then mark the answer which you have now decided is correct. For example if you now decide 'c' is correct, mark your answer like this

101	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	Cancel	Cancel	Cancel	

Any other marks on the form may invalidate some of your answers.

- Any calculations or rough working can be done on the question paper.
- Attempt all questions. If you find a question difficult, leave it and return to it later.

This paper contains 60 questions. Answer them using the 'boxes' numbered 1 to 60 on the answer sheet.

1 A housing development is being built. Which type of construction work is this?

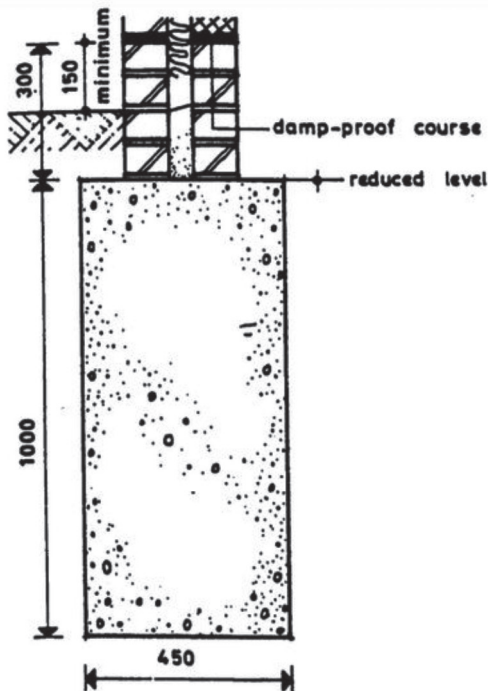
- a Industrial.
- b Domestic.
- c Conversion.
- d Renovation.

2 Which scale is used to draw floor plans for houses?

- a 1:10
- b 1:50
- c 1:750
- d 1:1250

3 Which Regulation specifically covers the use of adhesives?

- a COSHH.
- b PUWER.
- c HASAWA.
- d RIDDOR.

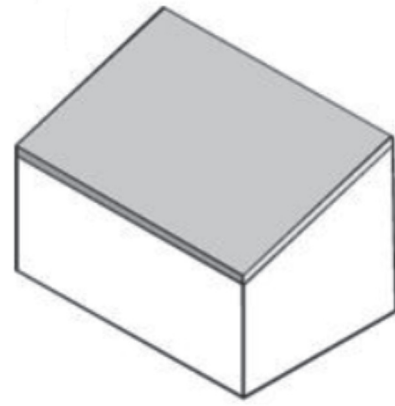


Foundation – published anonymously – <https://slideplayer.com>

Figure 1

4 Which type of foundation is shown in Figure 1?

- a Pad.
- b Pile.
- c Deep strip.
- d Reinforced raft.



Roof – published anonymously – bambubuild.com

Figure 2

5 What type of roof is shown in Figure 2?

- a Hipped.
- b Valley.
- c Duo pitch.
- d Mono pitch.



Joinery component – published anonymously – www.howdens.com

Figure 3

6 What will be the finished product when the components in Figure 3 are assembled?

- a Door lining.
- b Window frame.
- c Apron lining.
- d Box frame.

7 At what degree would a sliding bevel be set to mark out the plumb cut of a half pitch roof?

- a At 15°
- b At 30°
- c At 45°
- d At 60°

- 8 Why is it important to consider material storage when pre-planning a site layout?
- a To avoid double handling.
 - b To avoid the need for skips.
 - c To limit neighbourhood noise.
 - d To eliminate the need for security.

1 Number of people at work	2 Number of cubicles	3 Number of washbasins
1 to 5	1	1
6 to 25	2	2
26 to 50	3	3
51 to 75	4	4
76 to 100	5	5

HSE.gov.uk

Table 1

- 9 Table 1 shows an extract from the Workplace (Health, Safety and Welfare) Regulations 1992. What is the **minimum** number of cubicles required for a joinery shop with 19 joiners, 4 wood machinists, 2 labourers and a supervisor?
- a 2 cubicles with 2 wash basins.
 - b 2 cubicles with 3 wash basins.
 - c 3 cubicles with 2 wash basins.
 - d 3 cubicles with 3 wash basins.

- 10 Which element is the **second** to be installed in a new build house?
- a Floorboard.
 - b Door lining.
 - c Architrave.
 - d Studwork.

- 11 An operative has been asked to order the skirting boards for a rectangular room measuring 5.2 m long and 3.3 m wide, including an 800 mm wide door and a 1200 mm wide window. How many metres of skirting boards are required?
- a 15.0 m
 - b 16.2 m
 - c 17.0 m
 - d 17.8 m

- 12 An operative has been asked to calculate the amount of emulsion paint required to decorate a room measuring 4.1 m x 3.4 m with a ceiling height of 3 m. The covering capacity of paint is 9 m²/litre. How many 5 litre tins of emulsion paint would be required to apply two coats of paint to the walls?
- a 1
 - b 2
 - c 3
 - d 4

- 13 Which document is supplied by the product manufacturer when requested by the setter out, to provide information about their resources?
- a Requisition order.
 - b Material data sheet.
 - c Building Regulations.
 - d Bill of Quantities.

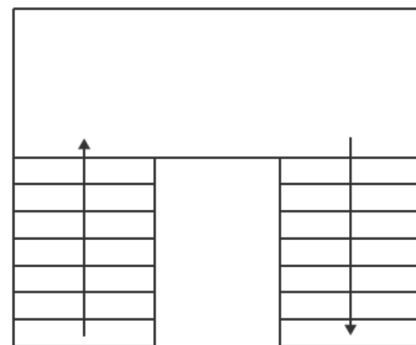


Figure 4

- 14 What type of staircase is shown in Figure 4?
- a Helical.
 - b Dog-leg.
 - c Winding.
 - d Open well.

15 Which conversion method produces the **most** suitable timber for floor joists?

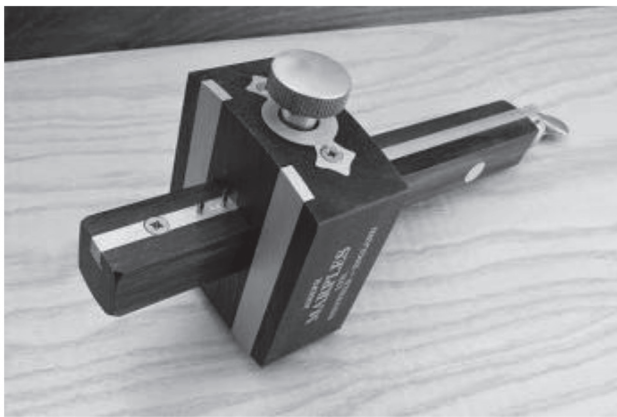
- a Tangential.
- b Quarter cut.
- c Boxed heart.
- d Through and through.

16 What timber is **most** commonly used as a plywood veneer?

- a Ash.
- b Oak.
- c Birch.
- d Elm.

17 Which adhesive is emulsion based?

- a PU.
- b PVA.
- c Phenol formaldehyde.
- d Melamine formaldehyde.



Gauge – publish anonymously – <https://www.workshopheaven.com>

Figure 5

18 What type of gauge is shown in Figure 5?

- a Cutting.
- b Mortice.
- c Marking.
- d Combination.

19 A pair of single action doors are to be fitted. What ironmongery is required?

- a Hinges, 1 pair of push plates, 1 pair of handles and a door selector.
- b Hinges, 2 pairs of handles, 2 pairs of push plates and a door selector.
- c Hinges, 2 pairs of push plates and 4 flush bolts.
- d Hinges, 1 pair of handles and 4 flush bolts.

20 A window frame has been constructed so the head and cill have no horns. Why are the joints secured with star dowels rather than by wedging?

- a To prevent the cill and head splitting when the star dowel is driven.
- b To prevent the remaining inside wedge pushing the joint open.
- c The wedges restrict the removal of the horns.
- d The star dowels will act as a draw-bore.

	Timber	Dovetail angle
W	Oak	1:6
X	Whitewood	1:8
Y	Redwood	1:6
Z	Beech	1:8

Table 2

21 Which two options in Table 2 correctly match the dovetail angle required for the timber being jointed?

- a W and X
- b X and Y
- c Y and Z
- d Z and W

22 What is the benefit of using kiln dried timber?

- a To make it pliable.
- b To preserve the wood.
- c To kill any fungus present.
- d To reduce the seasoning time.

23 The hypotenuse dimensions of a step are required to be marked along the margin line of a stair string. Which tool will step this dimension off **most** accurately?

- a 200 mm pair of spring bow compasses.
- b 200 mm pair of quadrant dividers.
- c 400 mm trammel beam.
- d 600 mm steel rule.

24 Which method produces consistently accurate results when marking out shoulder lengths of the transom rail for a batch of window frames?

- a Mark the transom out directly from the rod.
- b Mark the transom out from the pattern head.
- c Scale the transom shoulder length from the architects drawing.
- d Use a calculator to determine the shoulder length of the transom.

25 Match the moisture content in List 1, with the final position the timber is to be used in List 2.

List 1

- 1 7-9%
- 2 11-13%
- 3 14-16%
- 4 17-19%

List 2

- W Staircase.
- X Window.
- Y Roof truss.
- Z Radiator casings.

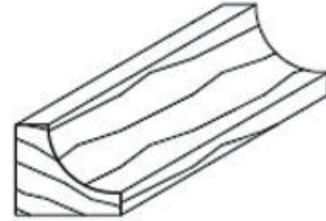
	W	X	Y	Z
a	1	2	3	4
b	2	3	4	1
c	3	2	4	1
d	4	1	3	2

26 What is used to reinforce the joint between the tread and riser?

- a Shrinkage plates.
- b Corner brackets.
- c Folding wedges.
- d Glue blocks.

27 Which joint is used to connect a muntin to a top rail in panelled door construction?

- a Housing.
- b Dovetail.
- c Stub tenon.
- d Corner bridle.



Moulding – published anonymously – <https://solumber.com>

Figure 6

28 What type of moulding profile is shown in Figure 6?

- a Torus.
- b Ovolo.
- c Scotia.
- d Thumb.

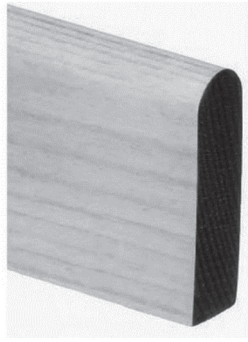


Ironmongery – published anonymously – <https://media.screwfix.com>

Figure 7

29 What item of ironmongery is shown in Figure 7?

- a Casement stay.
- b Sash fastener.
- c Ratchet bolt.
- d Norfolk latch.



Moulding – published anonymously – www.builderdepot.co.uk

Figure 8

- 30 What is the purpose of the moulded component shown in Figure 8?
- To separate vertical sliding sashes.
 - To trim around a door frame.
 - To increase the thickness of a stair tread.
 - To provide capping to a stair string.
- 31 How can a handrail be pulled tight to a newel on-site?
- With the use of folding wedges.
 - With the use of foxed wedging.
 - With the use of star dowels.
 - With the use of draw dowels.
- 32 Why is a dowel grooved along its length?
- To allow a smaller hole to be bored.
 - To prevent break out on the remote face.
 - To allow excess glue to escape from the hole.
 - To prevent it from splitting.
- 33 What is the purpose of a mullion?
- It provides a means of dividing a window into sections.
 - It provides a means of dividing a door into sections.
 - To provide a post in corner base unit construction.
 - To provide a post in stair construction.

- 34 An operative has been given the data below and asked to calculate the horizontal measurement between the top and the bottom newel of a staircase. What is this measurement?

Data

The flight had 5 risers.

The going is 250 mm.

The newels are 90 mm x 90 mm.

- 910 mm
 - 1000 mm
 - 1250 mm
 - 1160 mm
- 35 Match the mortice and tenon joint required in List 1, to the product position in List 2.

List 1

- Twin
- Franked
- Haunched
- Bare faced

List 2

- W Top rail to stile of a panelled door.
 X Middle/lock rail to stile of a panelled door.
 Y Bottom rail to stile of an ovolo moulded sash.
 Z Bottom rail to stile of a framed ledged and braced door.

	W	X	Y	Z
a	2	1	3	4
b	4	3	2	1
c	3	1	2	4
d	3	2	4	1

- 36 This question consists of a statement and a reason. Which option relating to the statement and reason is correct?

Statement

In door construction, the glazed pane should be 5 mm smaller than the rebate size it sits in.

Reason

To allow for expansion of the glass.

- Statement false Reason true.
- Statement false Reason false.
- Statement true Reason true.
- Statement true Reason false.

37 Pattern components are being marked out for a batch of stairs. Which **two** components can be marked out directly from **each** other?

- a Newel and riser.
- b Riser and string.
- c String and handrail.
- d Handrail and riser.

38 Which Regulation specifically covers the safe use of a router table?

- a CDM.
- b COSHH.
- c RIDDOR.
- d PUWER.

39 What should be used to safely plane short lengths of timber on a surface planer?

- a False bed.
- b Push stick.
- c Push block.
- d Saddle board.

40 Which machine has a thrust wheel?

- a Spindle moulder.
- b Surface planer.
- c Thicknesser.
- d Bandsaw.

41 Which machine has a sliding table?

- a Wall saw.
- b Bandsaw.
- c Cross-cut saw.
- d Dimension saw.

42 Which machine is used when mitring bed mouldings to a panelled door?

- a Rip saw.
- b Wall saw.
- c Chop saw.
- d Cross-cut saw.



Woodworking machine part – published anonymously – <https://www.bricoutensili.com>

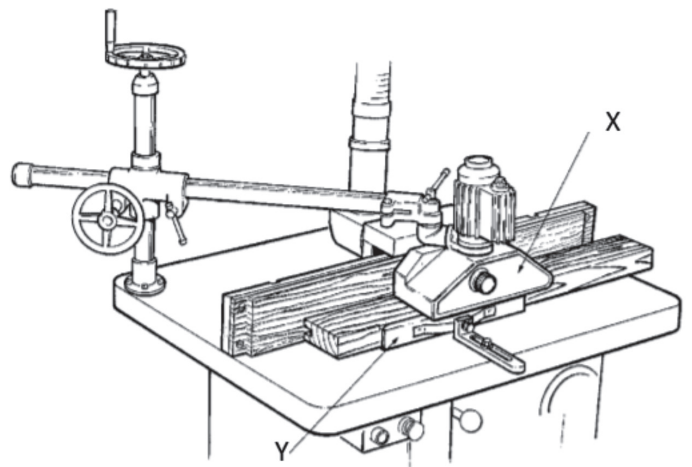
Figure 9

43 On which machine would the component in Figure 9 be fitted?

- a Rip saw.
- b Thicknesser.
- c Cross-cut saw.
- d Spindle moulder.

44 Which guard is set up to ensure a surface planer is used safely?

- a Bonnet.
- b Crown.
- c Bridge.
- d Nose.

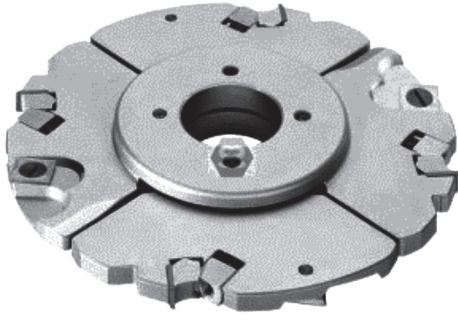


Spindle – published anonymously – www.hse.gov.uk

Figure 10

45 Which spindle moulding component is shown at 'Y' in Figure 10?

- a False fence.
- b Shaw guard.
- c Crown guard.
- d Automatic feed.



Cutter block – published anonymously – <https://www.scosarg.com>

Figure 11

- 46 What type of cutter block is shown in Figure 11?
- Panel raiser.
 - Variable angle.
 - Variable profile.
 - Adjustable groover.
- 47 Which pre-start check is made prior to running a bandsaw machine?
- The bridge guard is correctly set.
 - The adjustable bed is locked.
 - The cutter block runs freely.
 - The tracking is set correctly.
- 48 What has to be adjusted when bevel cutting on a bandsaw?
- Table bed.
 - Cutter block.
 - Tracking wheel.
 - Guide assembly.
- 49 What **must** be marked on a circular sawing machine?
- The minimum saw blade speed.
 - The maximum saw blade speed.
 - The minimum saw blade diameter.
 - The maximum saw blade diameter.
- 50 Which is the next operation to be carried out after planing the face of the timber on a surface planer?
- Bringing to width.
 - Edging the timber.
 - Deeping the timber.
 - Bringing to thickness.
- 51 What depth of stub mortice is required for a stair string tenon, when jointed to a 95 mm square newel?
- 15 mm
 - 35 mm
 - 55 mm
 - 85 mm
- 52 What will be the effect if the extraction is blocked when bringing planed timber to thickness?
- Chip bruising will show on the face of the timber.
 - Varying dimensions of timber will be produced.
 - Tram lines will be produced on the face of the timber.
 - The timber will chatter as it passes by the cutter block.
- 53 Timber that has been machined on surface planer is showing pronounced pitch marks. What is the cause?
- The cutters are dull.
 - The feed speed is too fast.
 - The infeed table is set too high.
 - The cutter block is not balanced.
- 54 In what order are the following sections of timber machined to width?
- 45 mm x 16 mm
 - 80 mm x 32 mm
 - 34 mm x 34 mm
 - 120 mm x 32 mm
- 1, 2, 3, 4
 - 1, 3, 2, 4
 - 4, 2, 1, 3
 - 4, 3, 2, 1
- 55 Which machine has the following four components?
- Fence.
 - Drive belt.
 - Cutter block.
 - Adjustable infeed table.
- Morticer.
 - Thicknesser.
 - Surface planer.
 - Spindle moulder.



Spindle cutter – published anonymously – www.wealdentool.com

Figure 12

56 Which profile will be produced using the spindle cutter shown in Figure 12?

- a Handrail.
- b Sash stile.
- c Architrave.
- d Skirting board.

57 What is the cause of timber jamming immediately after passing over the cutter block when surfacing timber?

- a The infeed table is set too low.
- b The infeed table is set too high.
- c The outfeed table is set too low.
- d The outfeed table is set too high.

58 The back end of planed timber has dropped on to the cutter block when surfacing timber. What is causing this fault?

- a The false fence is not supporting the work.
- b The cutter block is projecting too far.
- c The outfeed table is too low.
- d The timber is not parallel.

59 A through mortice in a door stile is found to be offset in relation to its thickness. What has caused this fault?

- a The chisel has become blunt and is veering off.
- b The auger is loose in the chuck and boring out of true.
- c The depth stop has not been set accurately halfway though.
- d The face side has not been kept to the fence when rotated.

60 The stiles and rails of a door have been marked out. Using the information below what is the correct sequence of operation?

- W Mortice stiles.
- X Profile components.
- Y Cut tenons on bandsaw.
- Z Cut haunches on bandsaw.

- a W Z X Y
- b Y X W Z
- c Z X Y W
- d W Y X Z

NOW GO BACK AND CHECK YOUR WORK

- IMPORTANT -
Are the details at the top of the answer sheet correct?
Have you filled in your answers in INK in the appropriate boxes on the answer sheet?