



7906-505 JUNE 2018

Level 2 Technical Certificate in Architectural Joinery

Level 2 Architectural Joinery – Theory exam

Wednesday 20 June 2018
09:30 – 11:30

You should have the following for this examination

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

This question paper is the property of City & Guilds Limited 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"/> b	<input type="radio"/> c	<input type="radio"/> d
	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"/> b	<input type="radio"/> c	<input type="radio"/> d
	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"/> b	<input checked="" type="radio"/>	<input type="radio"/> d
	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 Who is responsible for producing drawings of joinery detailing?

- a Estimator.
- b Site Agent.
- c Quantity Surveyor.
- d Architectural Technician.

2 What document provides information on when materials will be required for a project?

- a Schedule.
- b Time sheet.
- c Risk assessment.
- d Programme of works.

3 At what scale are range drawings for windows drawn?

- a 1:1
- b 1:10
- c 1:50
- d 1:500

4 What type of foundation is **most** suitable for a two storey domestic property in good ground conditions?

- a Pad.
- b Raft.
- c Piled.
- d Strip.

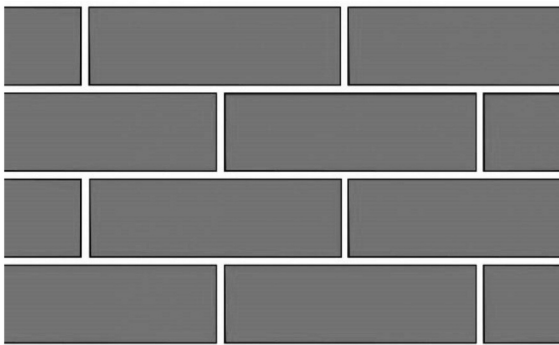


Figure 1

5 What type of brick bond is shown in Figure 1?

- a Header.
- b English.
- c Flemish.
- d Stretcher.

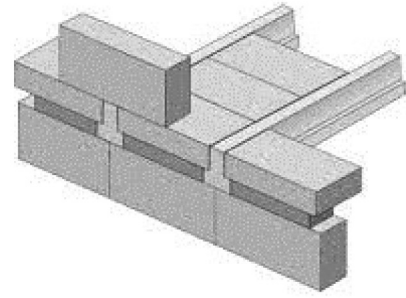


Figure 2

6 What type of floor construction is shown in Figure 2?

- a Solid concrete.
- b Beam and block.
- c Reinforced concrete.
- d Suspended timber floor.

7 What component supports the uppermost end of a common rafter couple close roof?

- a Wall plate.
- b Collar tie.
- c Ridge.
- d Purlin.

8 Which building element is installed first in a new build house?

- a Kitchen units.
- b Architrave.
- c Staircase.
- d Skirting.

9 Where is the insulation positioned in a 'cold construction' flat roof?

- a Directly above the plasterboard.
- b Above the decking.
- c Below the tiling battens.
- d Directly below the felt covering.

10 What role does the trimmer joist play in suspended timber floor construction?

- a Bridge the gap between load bearing walls.
- b Provide support to the trimming joist.
- c Provide support to the trimmed joists.
- d Bridge the gap between the outside walls.

- 11 An operative has been asked to provide pictorial drawings of a kitchen layout. What type of drawing will **best** show this?
- Oblique projection at 30°.
 - Isometric projection at 30°.
 - Orthographic projection at 45°.
 - Cavalier projection at 63°.
- 12 A client requires a new light weight partition to create an en-suite in their bedroom. Which is the **best** material specification for the partition?
- 50 mm x 50 mm studs and 9 mm plasterboard.
 - 100 mm x 25 mm studs and 16 mm plasterboard.
 - 75 mm x 50 mm studs and 12 mm plasterboard.
 - 75 mm x 25 mm studs and 9 mm plasterboard.

- 13 What document will inform of the potential dangers of using a product?
- Requisition order.
 - Material data sheet.
 - Building regulations.
 - Material specification.

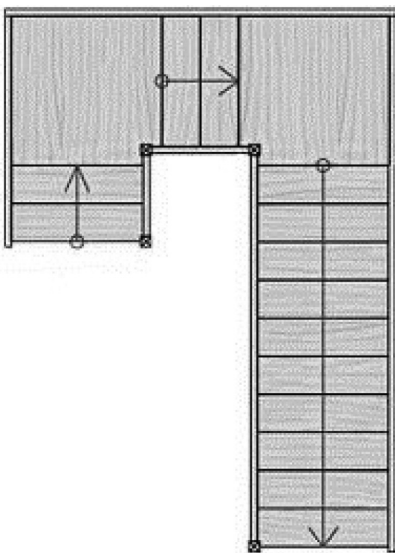


Figure 3

- 14 What type of staircase is shown in Figure 3?
- Helical.
 - Dog leg.
 - Winding.
 - Open well.

- 15 Which timber conversion method is used when the centre of the tree has become decayed?
- Tangential.
 - Quarter cut.
 - Boxed heart.
 - Through and through.

- 16 Which timber is **most** durable?
- English oak.
 - Douglas fir.
 - Mahogany.
 - European spruce.



Figure 4

- 17 What type of timber defect is shown in Figure 4?
- Cup shake.
 - Arris knot.
 - Face knot.
 - Resin pocket.

- 18 What is **best** used to set out a 1200 mm diameter circular window frame?
- Dividers.
 - Spring bow compass.
 - String line and pencil.
 - Trammel head and beam.

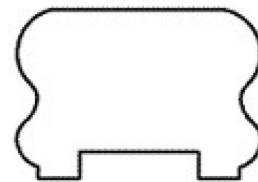


Figure 5

- 19 What component section is shown in Figure 5?
- Handrail.
 - Architrave
 - Bed moulding.
 - Bolection moulding.

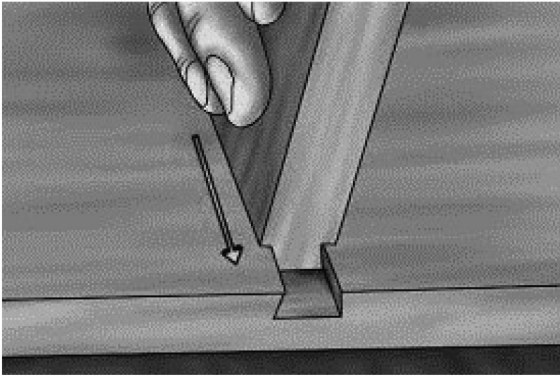


Figure 6

20 What type of housing joint is shown in Figure 6?

- a Stopped.
- b Lapped.
- c Dovetailed.
- d Tongued.



Figure 7

21 What type of moulding is shown on the skirting profile in Figure 7?

- a Ogee.
- b Torus.
- c Scotia.
- d Chamfer.



Figure 8

22 What item of ironmongery is shown in Figure 8?

- a Rim lock.
- b Sash lock.
- c Cupboard lock.
- d Mortice lock.

23 Why is a workshop rod drawn full size?

- a To assist with the estimating process.
- b It removes the requirement for a cutting list.
- c It allows joinery components to be marked out from it.
- d To provide a pictorial representation of the product to the client.

24 When setting out joinery work from architect's drawings, how can sizing errors be minimised?

- a Conduct a site survey.
- b Hold a production team meeting.
- c Check the accuracy of the scale.
- d Check the specification.

25 Why is redwood **best** avoided when selecting materials for cills?

- a Not durable.
- b Too expensive.
- c Difficult to machine.
- d Does not take a paint finish.

26 Why is moisture content for external joinery set in the range of 12-16%?

- a To increase the effectiveness of preservative treatment.
- b To minimise movement after installation.
- c To minimise the risk of insect attack.
- d To increase the thermal efficiency.

- 27 What tool is **best** used for marking out the shoulder lines for dovetail joints in drawer construction?
- Set square.
 - Box square.
 - Cutting gauge.
 - Marking gauge.
- 28 Where would a frieze rail component sit?
- Between the head and transom.
 - Between the middle rail and the bottom rail.
 - Between the top rail and the middle rail.
 - Between the muntin and stile.
- 29 Which type of tenon would be used to join a muntin to a middle rail of a panelled door?
- Gun stock.
 - Twin.
 - Bare faced.
 - Stub.
- 30 What pitch is suitable for dovetailing beech?
- 1:2
 - 1:4
 - 1:6
 - 1:8
- 31 What mortice and tenon joint is **best** used between a mullion and head of a window frame?
- Stub, because it can be wedged on both sides.
 - Twin, because it is easier to produce.
 - Through, because it can be wedged on both sides.
 - Haunched, because the joint is located at a corner.
- 32 A cutting list has been written for a bespoke ten panelled door. What are the next **four** operations in the sequence for the manufacture of the door?
- W Rip materials to width.
 X Face and edge materials.
 Y Plane materials to thickness.
 Z Crosscut materials to length.
- X W Z Y.
 - Z W X Y.
 - X Z W Y.
 - W X Z Y.
- 33 A pair of jambs have been marked out for a window with two fanlights and two lower outward opening casements. Which components can be marked off from the jambs?
- Top rails as it is more accurate than marking them off the rod.
 - Mullions, as it is more accurate than marking them off the rod.
 - Mullions, as they also require morticing for the head, transom and cill.
 - Top rails, as the shoulder length is the same as the distance between the head and cill.
- 34 An operative has been asked to manufacture decorative panelling in European Oak. What conversion method would be recommend for this type of panelling?
- Tangential, as this is the most economical method.
 - Tangential, as this will produce the strongest timber.
 - Quarter sawn, as this will show the medullary rays to best effect.
 - Through and through, as this will show the medullary rays to best effect.
- 35 The question below consists of a statement and a reason. Identify the statement that correctly relates to the reason and select the correct answer.
- Statement**
 In staircase production a bare faced tenon is often used to connect the strings to the newels.
- Reason**
 It prevents the newel from twisting when the securing dowel is driven.
- Statement false reason true.
 - Statement true reason true.
 - Statement false reason false.
 - Statement true reason false.

36 A site survey has been taken for a straight flight of stairs to a residential house. The individual step rise and going has been calculated. Which option will meet the building regulations?

	Rise	Going
a	190 mm	190 mm
b	220 mm	220 mm
c	190 mm	220 mm
d	220 mm	190 mm

37 What document will provide information on the maintenance requirements for a surface planer?

- a Manufacturer's catalogue.
- b BWF machine safety card.
- c Manufacturer's instructions.
- d HSE woodwork information sheets.

38 What guard is set up to ensure a rip saw is used safely?

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

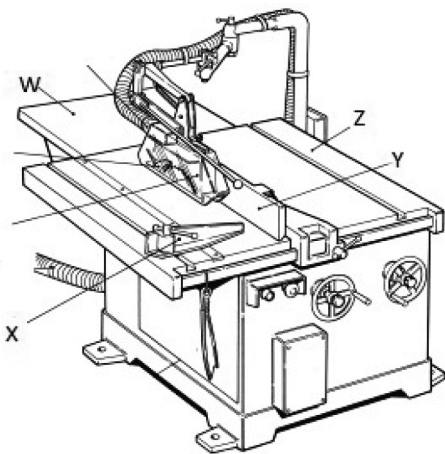


Figure 9

39 What circular saw component is identified at 'W' in Figure 9?

- a Machine bed.
- b Infeed table.
- c Extension table.
- d Cross-cut fence.

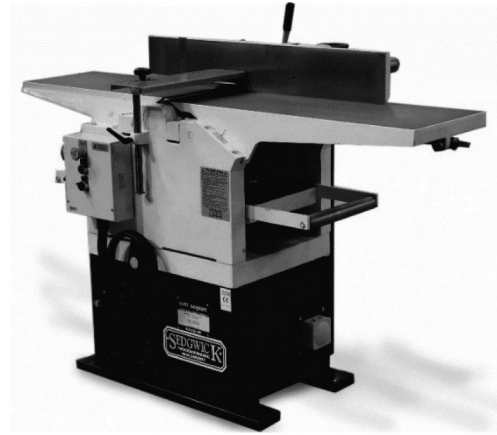


Figure 10

40 What machine is shown in Figure 10?

- a Table router.
- b Surface planer.
- c Spindle moulder.
- d Combination planer.



Figure 11

41 What is the name of the tool shown in Figure 11?

- a Forstner bit.
- b Masonry bit.
- c Hollow square chisel.
- d Flush cutting router bit.



Figure 12

42 What machine is shown in Figure 12?

- a Cross cut saw.
- b Surface planer.
- c Spindle moulder.
- d Combination planer.

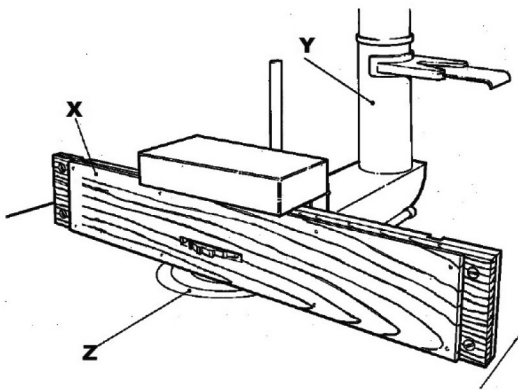


Figure 13

43 What spindle moulding component is shown at 'z' in Figure 13?

- a Table rings.
- b False fence.
- c Cutter block.
- d Machine bed.

44 When setting up a surface planer, which pre-start check is made?

- a The tracking is correct.
- b The cutter speed is correct.
- c The riving knife is positioned correctly.
- d The infeed table is set to the correct depth.

45 On which machine is auger clearance a pre-start check?

- a Rip saw.
- b Morticer.
- c Surface planer.
- d Spindle moulder

46 According to ACOPs, what is the **minimum** distance the hand is allowed to be from a saw blade, when using a push stick?

- a 200 mm.
- b 300 mm.
- c 400 mm.
- d 500 mm.

47 What are excessive pitch marks caused by?

- a Slow feed speed.
- b Slow motor speed.
- c Fast feed speed.
- d Fast motor feed.

48 What is the **minimum** thickness that timber can be planed through a Thicknessing machine with a false bed?

- a 1 mm
- b 3 mm
- c 7 mm
- d 10 mm

49 What drives the mortice chisel into the timber on a morticing machine?

- a Foot pedal.
- b Hand lever.
- c Automatic feed.
- d Rotating auger.

50 What machine requires the use of top and side Shaw guards, when a power feed is not available?

- a Spindle moulder.
- b Surface planer.
- c Thicknesser.
- d Rip saw.

- 51 What type of cutting action removes the timber on a spindle moulding machine?
- Slicing.
 - Rotary.
 - Shearing.
 - Reciprocating.

- 52 What operation follows crosscutting when machining timber?
- Marking out.
 - Ripping to width.
 - Planing the face side.
 - Planing the face edge.

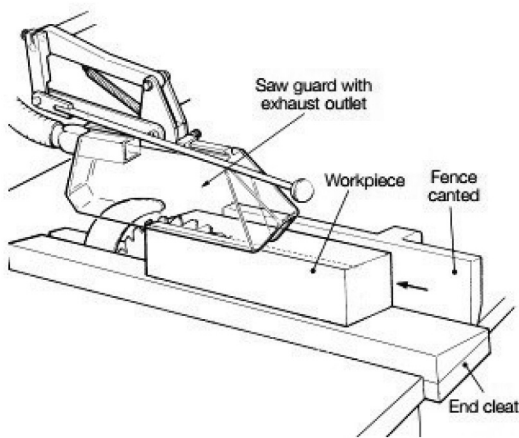


Figure 14

- 53 What cutting operation is aided using the jig shown in Figure 14?
- Cross-cutting.
 - Wedge cutting.
 - Bevelled ripping.
 - Glue block ripping.
- 54 What holds the timber down to the machine bed of a thicknessing machine after the cut?
- Infeed roller.
 - Cutter-block.
 - Outfeed roller.
 - Anti-kickback fingers.

- 55 What is the **most** likely cause of the cutting irons on a thicknessing machine becoming dull very quickly in use?
- Too little timber being removed in one pass.
 - Too much timber being removed in one pass.
 - The abrasive nature of the timber being planed.
 - The face of the timber has not been planed straight.
- 56 Match the components in list 1, with the machines they belong to in list 2 and select an answer that **best** matches list 1 and list 2.

List 1

- Crown guard
- Thrust wheel
- Infeed table
- Outfeed table
- Rise and fall adjustment

List 2

- W Surface planer.
 X Thicknesser.
 Y Rip saw.
 Z Bandsaw.

	W	X	Y	Z
a	5	4	3	1
b	2	4	5	2
c	3	5	1	2
d	5	3	2	5

- 57 When cross cutting timber it pinches on the side of the saw. Which **best** describes the cause and remedial action for this problem?
- The timber is bow side up, turn the timber over.
 - The timber is too wet, pull the saw through slowly.
 - The timber is bow side down, turn the timber over.
 - The timber is too dry, brush with water before sawing.

- 58 The face of thickened timber has a raised tram line along its entire length. What has caused this fault?
- a The feed speed is too fast, reduce feed speed.
 - b There is a gap in the cutter, feed timber away from that area.
 - c Too much timber has been removed in one pass, reduce depth of cut.
 - d Too little timber has been removed in one pass, increase depth of cut.

- 60 Beech has been thickened for the framing material for a panelled door. The faces of the planed timber has been torn up as the cutter has rotated. Which **best** describes why this has happened?

- a The feed speed was too slow.
- b The infeed rollers are covered in resin.
- c The timber has been fed with the grain.
- d The timber has been fed against the grain.

- 59 Timber for a batch of doors has been marked out. What is the correct sequence for machining the timber to produce the component parts?

- W Mortice.
- X Rip tenons.
- Y Machine the raised panels.
- Z Run profiles in framework.

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