



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 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"/> 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.

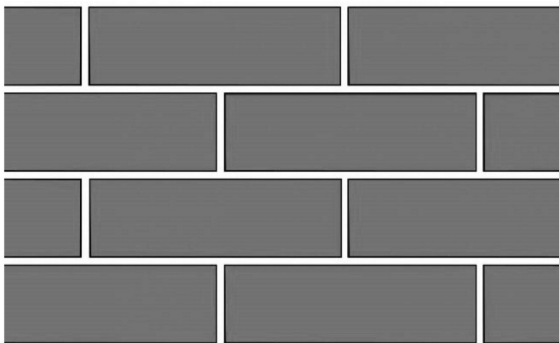


Figure 1

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

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

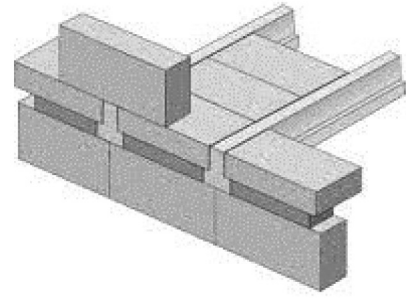


Figure 2

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?
- a Oblique projection at 30°.
 - b Isometric projection at 30°.
 - c Orthographic projection at 45°.
 - d 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?
- a 50 mm x 50 mm studs and 9 mm plasterboard.
 - b 100 mm x 25 mm studs and 16 mm plasterboard.
 - c 75 mm x 50 mm studs and 12 mm plasterboard.
 - d 75 mm x 25 mm studs and 9 mm plasterboard.

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

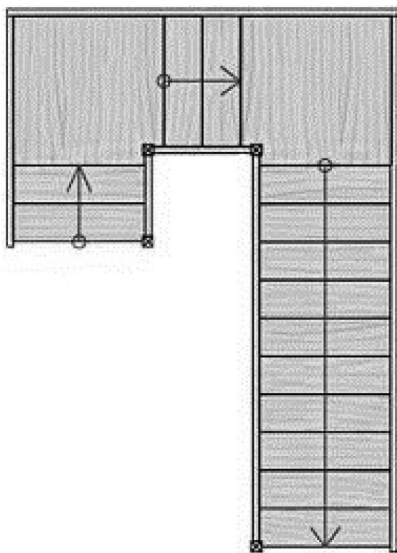


Figure 3

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

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

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



Figure 4

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

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

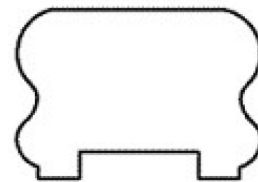


Figure 5

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

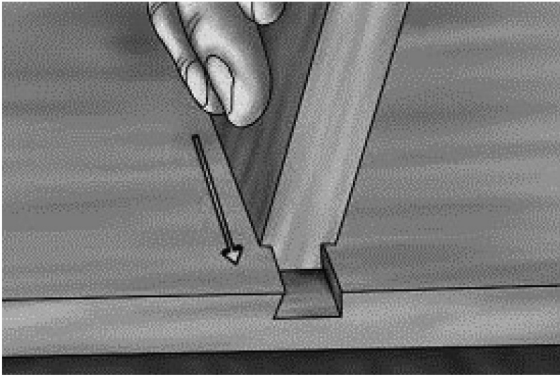


Figure 6

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.

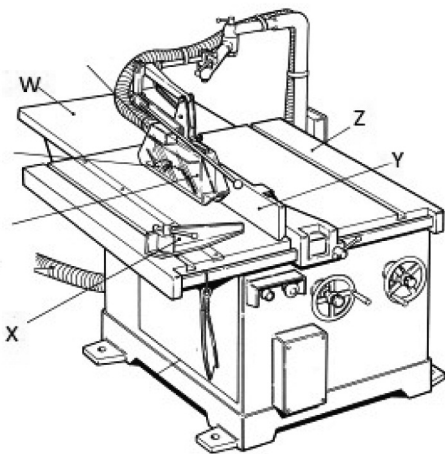


Figure 9

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.

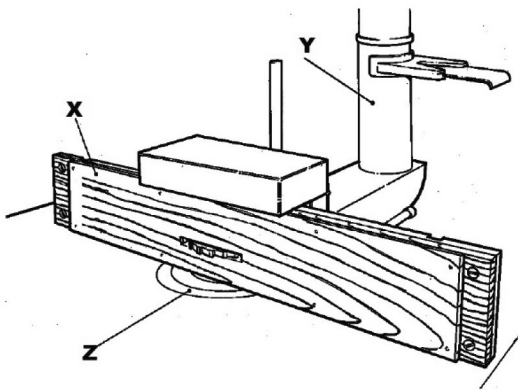


Figure 13

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.

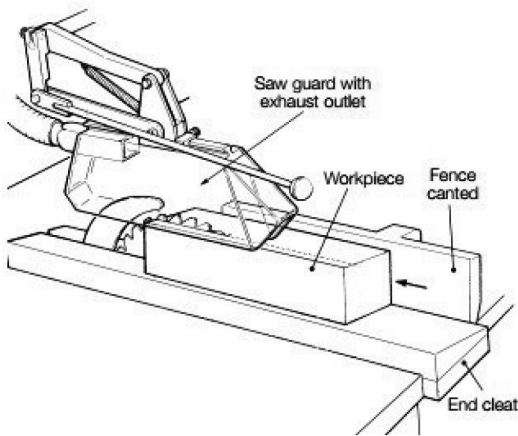


Figure 14

- 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?