



7906-505 MARCH 2018
Level 2 Technical Certificate in Architectural Joinery
Level 2 Architectural Joinery – Theory exam

Wednesday 21 March 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 Which member of the building team has a craft role?

- a Surveyor.
- b Bricklayer.
- c Quantity surveyor.
- d Architectural technician.

2 What is a 3D model-based process, which equips professionals with the information to manage construction?

- a The specification.
- b Bills of quantities.
- c CPA.
- d BIM.

3 What regulation covers employee's working on a podium platform?

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

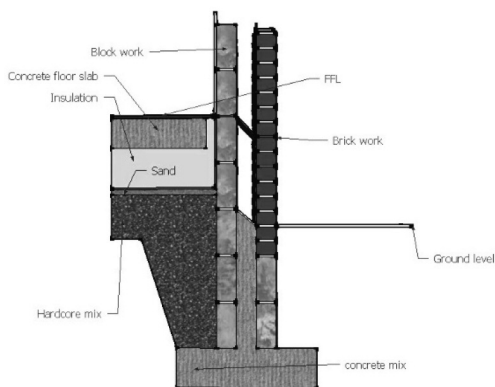


Figure 1

4 What type of foundation is shown in Figure 1?

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

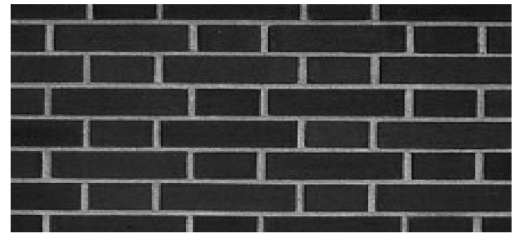


Figure 2

5 What type of brick bond is shown in Figure 2?

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

6 What type of paint system is **most** suitable for internal woodwork?

- a Primer, mist coat and gloss.
- b Primer, undercoat and gloss.
- c Primer, mist coat and emulsion.
- d Primer, undercoat and mist coat.

7 Which statement is true, in relation to drawing methods?

- a Hand drawings can be easily distributed.
- b CAD drawings can be easily modified.
- c Hand drawings are only used by technicians.
- d CAD drawings can be produced by anyone on site.

8 How are the general public, materials and equipment protected from work being undertaken on-site?

- a Close supervision.
- b Security lighting.
- c Movement sensor.
- d A boundary site hoarding.

9 What component is the upper end of a common rafter fixed to?

- a Wall plate.
- b Sole plate.
- c Ridge.
- d Purlin.

10 Which part of a structure is installed first in a new build?

- a Stud work.
- b Pipe casing.
- c Door lining.
- d First floor.

11 A house is being constructed with a cavity wall with a block inner and a brick outer leaf. Which statement **best** describes the reason the brickwork bond is used for the outer leaf?

- a Flemish bond as it is the quickest to lay.
- b English bond, as this is the strongest bond.
- c Stretcher bond, as this is used for a half brick wall.
- d Stretcher bond, as this is used for a one brick thick wall.

12 The walls of a garage with a couple roof construction have been pushed apart at wall plate level. Which statement is true?

- a The mortar used when laying the bricks was too weak.
- b The weight of the roof covering has caused the rafters to spread.
- c The wall plate has rotted no longer providing support to the rafter feet.
- d The section size of the rafters was too large.

13 What approved document of the Building Regulations, provides information on required handrail heights?

- a A.
- b C.
- c K.
- d L.

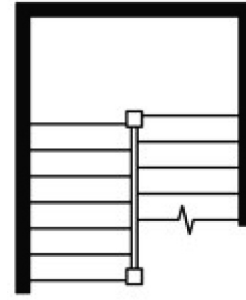


Figure 3

14 What type of staircase is shown in Figure 3?

- a Dog leg.
- b Winding.
- c Open well.
- d Independant.

15 Which is a standard commercial size for MDF board?

- a 2440 mm x 1220 mm
- b 2000 mm x 1000 mm
- c 2440 mm x 1000 mm
- d 2000 mm x 1220 mm



Figure 4

16 What type of timber defect is shown in Figure 4?

- a Blue stain.
- b Arris knot.
- c Face knot.
- d Resin pocket.

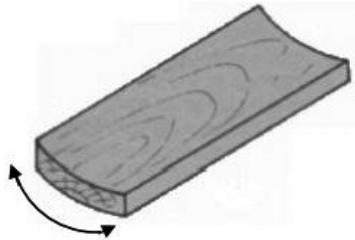


Figure 5

17 What defect is shown in Figure 5?

- a Springing.
- b Twisting.
- c Cupping.
- d Bowing.



Figure 6

18 What type of gauge is shown in Figure 6?

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

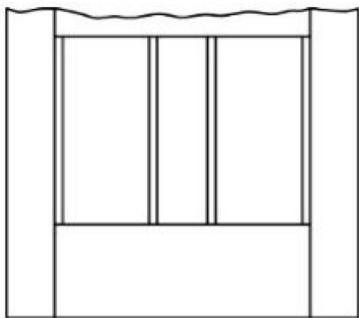


Figure 7

19 What type of panel is shown in Figure 7?

- a Sunk.
- b Raised.
- c Bead and butt.
- d Bead and flush.

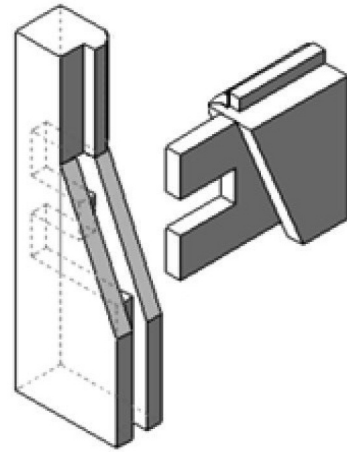


Figure 8

20 What type of mortice and tenon joint is shown in Figure 8?

- a Franked.
- b Haunched.
- c Diminished shoulder.
- d Long and short shouldered.



Figure 9

21 What type of moulding profile is shown Figure 9?

- a Ovolo.
- b Torus.
- c Pencil round.
- d Lambs tongue.



Figure 10

- 22 What item of ironmongery is shown in Figure 10?
- Bales catch.
 - Sash pulley.
 - Drawer runner.
 - Concealed hinge.
- 23 What three headings are all required on a cutting list?
- Thickness, length and remarks.
 - Material type, width and cost.
 - Quality, cost and description.
 - Purpose, remarks and cost.
- 24 What scale would joinery detail be shown on a workshop rod?
- 1:1
 - 1:2
 - 1:5
 - 1:10
- 25 Which timber conversion method produces the least waste?
- Tangential.
 - Quarter cut.
 - Boxed heart.
 - Through & through.
- 26 Which timber is **most** durable?
- Whitewood.
 - Redwood.
 - Beech.
 - Oak.
- 27 Which timber has the lowest density?
- European redwood.
 - European whitewood.
 - Mahogany.
 - Oak.
- 28 Which type of tenon would be use to join the middle rail to the stile, on a frame ledged and braced door?
- Fox wedged.
 - Twin.
 - Bare faced.
 - Stub.
- 29 What pitch is suitable for dovetailing softwood?
- 1:2
 - 1:4
 - 1:6
 - 1:8.
- 30 What would be the **most** suitable thickness of a single tenon for a door jamb with a 95 mm x 57 mm section?
- 10 mm.
 - 12 mm.
 - 25 mm.
 - 50 mm.
- 31 What type of square is **best** used to transfer lines around pre-moulded sash stock?
- Box.
 - Tee.
 - Set.
 - Try.
- 32 When a line has been marked around four faces of a piece of timber they do not meet. This means the square is **not** true. How could this situation be avoided?
- Using a sharp 2H grade pencil.
 - Ensuring the stock of the square was fully against the timber.
 - The stock of the square should only have been applied to the face side and edge when marking the lines.
 - A square with a longer stock should have been used to bridge the imperfections along the length of the timber.

- 33 After you have marked out a pair of strings, to ensure the assembled stair isn't twisted, what needs to be checked prior to routing, the tread and riser housings.
- a Check the hypotenuse length.
 - b Check the strings are marked out as a pair.
 - c Check that the nosing projection is less than 15 mm.
 - d Check the marked out pitch exceeds 45°.

- 34 The question below consists of a statement and a reason. Identify the comment that correctly relates to these and select an answer that **best** match the statement and reason.

Statement

The moisture content of timber used in internal joinery can vary between 8-20%.

Reason

The moisture content will stabilise with its final environment.

- a Statement true reason true.
- b Statement false reason true.
- c Statement true reason false.
- d Statement false reason false.

- 35 Match the power tools in list 1, with the operations they are **best** suited for in list 2 and select the correct answer.

List 1

- 1 Chop saw
- 2 Router
- 3 Drill/driver
- 4 Random orbital sander
- 5 Belt sander
- 6 Jigsaw

List 2

- W Mitring staff beads
- X Sanding the faces of hardwood doors
- Y Fixing concealed hinges
- Z housing stair strings.

	W	X	Y	Z
a	1	5	3	6
b	1	4	3	2
c	6	5	2	6
d	6	3	5	2

- 36 You have been asked to manufacture panelled doors in European Oak. What is the **best** conversion method to be used?
- a Tangential, as this will produce the strongest timber.
 - b Through and through, as this produces the strongest timber.
 - c Tangential, as this will show the medullary rays to best effect.
 - d Quarter sawn, as this will show the medullary rays to best effect.

- 37 The question below consists of a statement and a reason. Select an answer that **best** relates to the statement and reason.

Statement

In high class joinery production a central tenon is used to connect the strings to the newels.

Reason

It prevents the string from cupping in its width along its entire length.

- a Statement true reason true.
- b Statement false reason true.
- c Statement true reason false.
- d Statement false reason false.

- 38 Oak matchboarding is to be fixed to a ledged and braced door. What type of nail should be used?

- a Brass nails, as they will not bend.
- b Mild steel ovals, as they will not rust.
- c Stainless nails, as it will not corrode.
- d Galvanised clout nails as they clench easily.

- 39 What guidance document specifically provides information on the safe use of woodworking machinery?

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

- 40 What is the **maximum** gap allowed between the back of a saw blade and the riving knife at table level?
- a 5 mm.
 - b 8 mm.
 - c 11 mm.
 - d 14 mm.

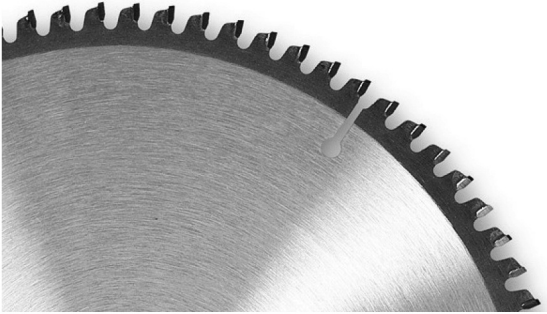


Figure 11

- 41 What circular saw tooth type is shown in Figure 11?
- a HSS, positive rake.
 - b HSS negative rake.
 - c TCT positive rake.
 - d TCT negative rake.
- 42 On what type of sawing machine would a thrust wheel be found?
- a Rip.
 - b Chop.
 - c Band.
 - d Crosscut.
- 43 What is the name of the guard that covers the cutter block on a surface planer?
- a Nosing.
 - b Bridge.
 - c Riving.
 - d Crown.
- 44 On which machine is a shaw guard found?
- a Cross cut saw.
 - b Thickness planer.
 - c Hollow square morticer.
 - d Vertical spindle moulder.

- 45 On what machine would a depth stop be found?
- a Morticer.
 - b Bandsaw.
 - c Dimension saw.
 - d Spindle moulder.



Figure 12

- 46 What type of router cutter is shown in Figure 12?
- a Core box.
 - b Flush trimming.
 - c Ball race guided.
 - d Fixed pin guided.
- 47 What gap should be set between the auger and 12 mm chisel on a morticing machine?
- a 0.5 mm.
 - b 1.5 mm.
 - c 3.5 mm.
 - d 5.5 mm.
- 48 When changing a bandsaw blade, which pre start check is made?
- a The tracking is correct.
 - b The cutter speed is correct.
 - c The bridge guard is correctly set.
 - d The riving knife is positioned correctly.
- 49 Which operation **must** be carried out on a bandsaw at the end of the day?
- a Remove the blade.
 - b Ease off the tension.
 - c Remove the mouth piece.
 - d Ease off the thrust wheel.

- 50 In what circumstances can a rebate be formed on a surface planer?
- When the rebate is over 50 mm wide.
 - When the rebate is over 15 mm deep.
 - When a spindle moulder is not available.
 - When a combination saw bench is not available.
- 51 What depth should the chisel be set when producing through mortices on 40 mm thick timber?
- 20 mm.
 - 25 mm.
 - 35 mm.
 - 40 mm.
- 52 On what machine is a tunnel guard used when machining timber?
- Bandsaw.
 - Thicknesser.
 - Cross cut saw.
 - Profiling machine.
- 53 What feature of a saw tooth collects the waste wood as it rotates?
- Set.
 - Kerf.
 - Root.
 - Gullet.
- 54 What does a split feed roller allow on a thicknessing machine?
- Short lengths can be fed safely.
 - Long lengths do not require end support.
 - Increased stock removal in one pass.
 - More than one piece can be fed at the same time.
- 55 On which machine would cutter block adjustment be found?
- Morticer.
 - Cross-cut saw.
 - Surface planer.
 - Spindle moulder.
- 56 What is the purpose of a false fence when using a profiling machine?
- To limit the height of cut.
 - To restrict the depth of cut.
 - To stop the cutter being ejected by accident.
 - To minimise the exposure of the cutter block.
- 57 What is the **most** likely cause of the end of a hollow square mortice chisel turning blue in use?
- Too little pressure applied with the morticing lever.
 - Too much pressure applied with the morticing lever.
 - Too little clearance between the auger and chisel.
 - Too much clearance between the auger and the chisel.
- 58 Timber has been thicknessed for stair strings and the faces show pronounced pitch marks. Which **best** describes the problem and how it can be fixed?
- The feed speed is too fast. Reduce the feed speed.
 - The feed speed is too slow. Increase the feed speed.
 - The friction rollers do not rotate. Lubricate the rollers.
 - The infeed rollers are covered in resin. Lift the pressure bar.

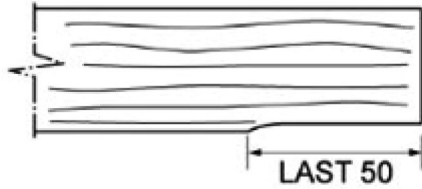


Figure 13

59 When planning the faces and edges on a surface planing machine the fault shown in Figure 13 occurs. Which **best** describes the cause of the fault and how can it be remedied?

- a The cutter block is set too high and needs to be lowered.
- b The infeed table is set too high and needs to be lowered.
- c The outfeed table is set too low and needs to be raised.
- d The outfeed table is set level with the infeed table.

60 Match the component parts in list 1 with the finished joinery item in list 2 and select the answer that **best** matches.

List 1

- 1 Jambs
- 2 Tread
- 3 Transom
- 4 Base board
- 5 Meeting rail
- 6 Top rail.

List 2

- W Door frame
- X Casement window
- Y Cupboard
- Z Box frame.

	W	X	Y	Z
a	1	4	6	5
b	1	6	4	5
c	6	5	4	3
d	6	5	2	3

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?