



# 7905-503 MARCH 2022

## Level 2 Technical Certificate in Bricklaying

### Level 2 Bricklaying – Theory exam

**Tuesday 22 March 2022**  
**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

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**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)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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.**

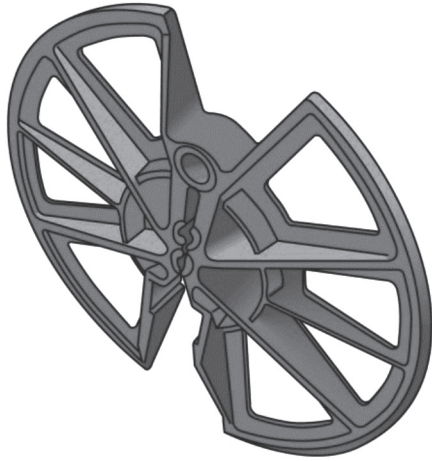
- 1 Who is a bricklayer's **main** point of contact when working on site?
- a Site operative.
  - b Craft operative.
  - c Site manager.
  - d Site surveyor.
- 2 Which document details the quality and type of concrete for use on site?
- a Schedule.
  - b Specification.
  - c Bill of quantities.
  - d Programme of works.
- 3 Which health and safety regulation relates to working on a scaffold?
- a Lifting Operations and Lifting Equipment.
  - b Personal Protective Equipment.
  - c Control of Noise at Work.
  - d Working at Heights.
- 4 Where should insulation materials be stored on site?
- a Near to the work area.
  - b At the side of the road.
  - c Locked in a container.
  - d Under the scaffolding.
- 5 Which type of foundation would be used on a detached pier?
- a Pad.
  - b Raft.
  - c Strip.
  - d Pile.
- 6 Which **two** services have meter boxes built into the external wall of a dwelling?
- a Water and drainage.
  - b Electric and gas.
  - c Telephone and water.
  - d Cable and fibre optics.
- 7 What is the name of the wall separating two rooms in a dwelling?
- a Curtain.
  - b Sleeper.
  - c Partition.
  - d Retaining.
- 8 Which type of ground floor construction incorporates blocks?
- a Steel.
  - b Concrete.
  - c Suspended timber.
  - d Suspended concrete.
- 9 Which roof component spreads the weight of the roof over the length of the wall?
- a Wall plate.
  - b Purlin.
  - c Rafter.
  - d Valley board.
- 10 Which operation within construction is classified as second fixing?
- a Installing partitions.
  - b Plumbing pipework.
  - c Hanging doors.
  - d Electrical wiring.
- 11 Why must clear instructions be followed when supervising the offloading of a consignment of bricks?
- a To protect the delivery and ensure easy future access.
  - b To ensure invoices for the materials are paid on time.
  - c To check the quantity of materials against the drawings.
  - d To get assistance from managers to unload by hand.

- 12 Why should the supervisor refer to the programme of work when working on a building project?
- To record the construction specification.
  - To determine the number of bricks required.
  - To confirm the collection and disposal of waste.
  - To confirm the start and end date of each work activity.
- 13 What are the **main** benefits of using CAD compared to traditional drawing systems?
- Less cost for computers and drawing software.
  - Less time spent producing and adjusting details.
  - Much easier to make alterations and send out to site.
  - Drawing programme is self-taught and easy to understand.
- 14 Why is it important to have a waste management system on site?
- To protect the environment and conform to legislation.
  - To minimise storage space and combine rubbish.
  - To save on materials and skip hire.
  - To reduce costs and double handling.
- 15 What is the **main** benefit of using stepped strip foundations on a sloping site?
- It is a much stronger foundation.
  - It saves on surface water drainage.
  - It reduces the amount of excavation.
  - It will save on hardcore in the trench.
- 16 Why are gas, water and electricity services contained in colour coded ducts below ground?
- To aid identification during excavation.
  - To protect them from the weather.
  - To indicate the depth of the trench.
  - To determine the type of backfill.
- 17 What is the **main** benefit of using metal stud walls for internal partitions in buildings?
- To provide excellent sound proofing.
  - To improve thermal efficiency.
  - To provide a solid structure for fixing to.
  - To provide a quick and easy method of construction.
- 18 How is the lintel height determined to ensure the internal door linings can be fitted correctly when building an internal block partition wall?
- Measure the height from the DPC level.
  - Measure the height from finished floor level.
  - Measure the height from the ceiling joist.
  - Measure the height from the skirting board.
- 19 A bricklayer has been asked to re-point a gable end and re-build a damaged chimney stack. What range of work would **best** describe these tasks?
- New build and Industrial.
  - Maintenance and Commercial.
  - Industrial and Commercial.
  - Maintenance and Renovation.
- 20 This question consists of a statement and a reason. Which of the following options relating to the statement and reason is correct?
- Statement  
Planning permission is more concerned with the building's appearance.
- Reason  
Planning permission ensures building regulations are met
- Statement true Reason false.
  - Statement false Reason true.
  - Statement true Reason true.
  - Statement false Reason false.

- 21 Whilst working onsite you are concerned that some of the scaffolding appears to be sinking. What immediate action should you take?
- Report it to your supervisor.
  - Inform the health and safety executive.
  - Include it in the risk assessment.
  - Try to rectify the problem.
- 22 An existing boundary brick wall 20 m long has developed cracks along its length. The wall must be taken down and rebuilt. Which construction method could be selected to rebuild the wall to ensure that the cracks do not reoccur?
- Lay in a stronger mortar.
  - Use engineering bricks.
  - Insert movement joints at 5 m intervals.
  - Add steel wall ties in alternate courses.
- 23 When building the face brickwork to the walls of a timber frame dwelling, which lintel would be used to bridge the openings?
- T shape steel lintel which bears on both leaves of the structure.
  - L shape steel lintel which is fixed back to the wooden structure.
  - Pre-cast concrete lintel bearing on the outer leaf only.
  - Box shaped lintel bearing on the inner leaf only.
- 24 A solid concrete ground floor has been specified for a domestic property. Following excavation, an excessive amount of fill is required. Which alternative floor system could be recommended?
- Block and beam floor.
  - Concrete oversite floor.
  - Screed floor.
  - Floating floor.
- 25 Which drawing should be used to identify the position of internal walls?
- Sectional.
  - Elevation.
  - Floor plan.
  - Detail.
- 26 What would be the effect of adding hydrated lime to a mortar mix?
- Increase strength.
  - Improve workability.
  - Reduce efflorescence.
  - Decrease porosity.
- 27 What is the smallest cut brick that can be used in the middle of a wall?
- Three quarter brick.
  - Quarter brick.
  - Half brick.
  - Full brick.
- 28 Which cuts are used to maintain the face bond when bonding a Tee Junction in a half brick thick wall?
- A header and two quarters.
  - Two quarter and a stretcher.
  - Two three quarter bricks.
  - A quarter and a header.
- 29 What is the **minimum** length for a steel lintel that is bridging an opening 1.500 m wide?
- 1.800 m
  - 1.750 m
  - 1.700 m
  - 1.650 m
- 30 Why is recently laid brickwork protected by covering with hessian and plastic sheeting?
- To prevent rising damp.
  - To protect from rain and frost.
  - To prevent the staining of mortar.
  - To protect walls from high winds.
- 31 Why would a three dimensional drawing be produced for the construction of a domestic dwelling?
- To allow more elevations to be seen on one drawing.
  - To allow a single elevation to be seen on one drawing.
  - To determine the exact floor levels.
  - To establish the exact roof angle.

- 32 Why is it important that bricks are selected from two lorry loads of facing bricks when loading out?
- To assist manual handling.
  - To ensure even usage.
  - To prevent banding.
  - To reduce wastage.
- 33 What is the purpose of adding plasticiser to mortar mix when mixing a mortar to build a face brick wall?
- To improve workability.
  - To eliminate efflorescence.
  - To prevent capillary attraction.
  - To increase compressive strength.
- 34 Why should a proprietary metal tie be used when tying a new wall to an existing building?
- To avoid damage to the DPC.
  - To prevent the passage of moisture.
  - To reduce the number of wall ties required.
  - To avoid excessive damage to the structure.
- 35 How can the structural stability of a wall be increased when building a garage using half brick thick walling?
- Using extra cement.
  - Rendering the wall.
  - Building attached piers.
  - Laying bricks frog down.
- 36 A contractor is building a right angled quoin to a height of 9 courses. How many bricks will need to be laid in **each** direction to allow the quoin to be racked back?
- 4 bricks by 4½ bricks.
  - 4½ bricks by 5 bricks.
  - 5 bricks by 5½ bricks.
  - 5½ bricks by 6 bricks.
- 37 Why is it important for the block inner leaf to be level with the brick outer leaf at the head of a window?
- To ensure that the lintel is seated correctly.
  - To allow the cavity width to be maintained.
  - To prevent the insulation from moving.
  - To avoid the use of cavity wall ties.
- 38 A bricklayer has been asked to calculate the overall area of a wall that needs to be pointed on both faces. The wall length is 7.600 m x 2.400 m high including a door opening 2.100 m high x 0.900 m wide. What is the overall area of the wall to be pointed?
- 16.350 m<sup>2</sup>
  - 18.240 m<sup>2</sup>
  - 26.350 m<sup>2</sup>
  - 32.700 m<sup>2</sup>
- 39 This question consists of a statement and a reason. Which of the following options relating to the statement and reason is correct?
- Statement**  
A half brick thick wall is often used to build detached garages.
- Reason**  
The inside of the garage never gets wet because the brickwork keeps the rain out.
- Statement true Reason true.
  - Statement false Reason false.
  - Statement true Reason false.
  - Statement false Reason true.
- 40 A bricklayer has been asked to build the window openings on a new house and temporary profiles are not available. It is important that the permanent frames fit correctly. Which three factors will ensure this?
- Make the opening slightly larger than window.
  - Make the opening slightly smaller than the window.
  - Lay the brickwork plumb on the reveals and face.
  - Make the opening square.
  - Lay the brickwork low to gauge.
- 1, 2, 5
  - 2, 3, 4
  - 3, 4, 5
  - 1, 3, 4

- 41 Which information source should be used to confirm the type of bricks to be used on a project?
- Schedule.
  - Specification.
  - Programme.
  - Elevations.



Cavity wall construction – published anonymously – <https://www.selcobw.com>

**Figure 1**

- 42 What is the component shown in **Figure 1** used for in cavity wall construction?
- To retain partial fill insulation boards.
  - To prevent passage of moisture.
  - To hold wall ties in position.
  - To avoid mortar build-up.
- 43 What action should be taken to control airborne dust when cutting bricks or blocks using a petrol driven masonry saw?
- Reduce the engine speed.
  - Use a water attachment.
  - Use a protective screen.
  - Change the blade type.
- 44 What does lapping the DPM with the DPC prevent?
- Heat loss.
  - Cold spots.
  - Rising damp.
  - Insect infestation.

- 45 Which component is placed over a lintel to direct water out of the cavity?
- Cavity closer.
  - Cavity tray.
  - Temporary profile.
  - Damp-proof membrane.
- 46 Which component is used in the construction of a gable end to increase lateral stability?
- Wall plates.
  - Timber noggin.
  - Restraint straps.
  - Adjustable props.
- 47 Which type of brick would be suitable for a window cill?
- Dog leg.
  - Double cant.
  - Bevel closer.
  - Single bullnose.
- 48 What is the **minimum** bearing at each end for a concrete lintel to span a door opening in an internal partition wall?
- 100 mm
  - 150 mm
  - 175 mm
  - 225 mm
- 49 Which materials would be used to protect a sandstone cill after positioning?
- Thick cardboard and screws.
  - Cement bags and bricks.
  - Plastic sheeting and hessian.
  - Hardboard and plastic sheet.
- 50 Why would a bricklayer refer to a schedule when trying to establish the lintels required for a new building?
- To select the type of trays to used.
  - To establish the type and size.
  - To confirm the amount of bearing required.
  - To determine the position of the weep holes.

- 51 When would it be necessary to insert a cavity tray in a parapet wall?
- Where external walls become internal walls.
  - Where the external wall is solid brickwork.
  - Where the wall extends above a garage.
  - Where the bricks used are porous.
- 52 A bricklayer has finished setting out a building and is checking it is square by measuring the diagonals. The building dimensions are 3 m x 4 m. What length are the diagonals?
- 2 m
  - 5 m
  - 7 m
  - 12 m
- 53 What is the main advantage of using a thin joint masonry system?
- Much faster method of construction.
  - Much stronger than concrete blocks.
  - Normal bricklaying tools can be used.
  - Can be laid with sand and cement mortar
- 54 Why is it essential when building a cavity wall, consisting of a brick outer leaf, block inner leaf and partial fill insulation, that the inner leaf is constructed first?
- To ensure the insulation batts are bonded.
  - To ensure the wall ties are fixed to the insulation.
  - To ensure the insulation can be fixed to the blockwork.
  - To ensure the insulation can be fixed to the brickwork.
- 55 Cavity trays are built into cavity walls above the opening. What is the purpose of inserting weep holes above the opening along the length of the tray?
- To ventilate the cavity.
  - To allow water out of the cavity.
  - To allow access to the wall cavity.
  - To prevent insects nesting in the cavity.
- 56 Why is it necessary to fit proprietary cavity closers when forming openings for windows and doors in cavity walls?
- To ensure airtightness.
  - To prevent movement in the cill.
  - To give extra support for the lintel.
  - To provide a fixing point for the frame.
- 57 How can the cleanliness of the working platform be maintained during the course of the day when working on a scaffold at a construction site?
- Shovel waste over the handrail to a skip below.
  - Turn the boards back and drop the waste through.
  - Clear waste at the end of the day when other workers have left the site.
  - Regularly collect waste in a container and lower to ground level.
- 58 Bricks and blocks are to be loaded onto a scaffold. The weather forecast predicts unsettled weather. Which actions, from the list below, should be taken when loading and to protect the materials before starting the work?
- Position the bricks and block next to standards.
  - Cover the bricks with waterproof covering.
  - Ensure the stacks are not higher than the handrail.
  - Position the mortar boards next to the wall.
  - Position the bricks and block next to the ledgers.
  - Ensure the stacks are not higher than the toe board.
  - Ensure walkways are kept clear.
  - Ensure the stacks are higher than the handrail.
- 4, 6, 7, 8
  - 1, 3, 5, 6
  - 1, 2, 3, 7
  - 2, 3, 6, 7

59 A bricklayer has been asked to calculate the volume of concrete required for a trench fill foundation 6.542 m long x 0.900 m deep x 0.600 m wide.

What volume of concrete will be required if the concrete is to be left 0.150 m below the surface?

- a 2.944 m<sup>3</sup>
- b 3.533 m<sup>3</sup>
- c 6.487 m<sup>3</sup>
- d 8.342 m<sup>3</sup>

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

**Statement**

Gauging mortar with a gauge box is much more accurate than using a shovel.

**Reason**

Using a shovel cannot maintain consistent volumes.

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

**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?