

Qualification title: 7906-30 Level 3 Advanced Diploma in  
Bricklaying (7905-30)

Version: June 2017

Base mark: 70

## Mark Scheme

1

Which insulation is **most** suitable for use under a solid floor?

- a. Sheep's wool.
- b. Glass fibre.
- c. Polyisocyanurate.
- d. Mineral wool.

Key: C

2

Who would be involved in preparing an open tender?

- a. Estimator.
- b. Site Manager.
- c. Quality Controller.
- d. Building Surveyor.

Key: A

3

When programming the construction of a timber framed dwelling, what activity is **not** on the critical path?

- a. Roof.
- b. Brickwork.
- c. Foundation.
- d. Timber frame.

**Key: C**

4

Which software considers the building design, construction, and management through the whole life cycle of the building?

- a. Manual Drafting.
- b. Computer Aided Design.
- c. Building Information Modelling.
- d. Building Management System.

**Key: C**

5

What should be considered when working with cutting discs?

- a. Don't use them to cut on scaffolding.
- b. Only electric tools require testing.
- c. Visual checks should be made before use.
- d. Once used they should be discarded.

**Key: C**

6

Which item of equipment should be used to set out a wall curved on plan?

- a. Sliding bevel.
- b. Trammel.
- c. Turning piece
- d. Square.

**Key: B**

7

What name is given to a wall that is built at an inclined angle and is often used to retain higher ground?

- a. Tapered.
- b. Battered.
- c. Tumbled in.
- d. Skewed back.

**Key: B**

8

What would a square be used for when building a 45° Herringbone panels?

- a. To mark all edge cuts.
- b. To create the laying angle.
- c. To help maintain 10 mm joints.
- d. To maintain the 90° bond.

**Key: B**

9

Which material would be best placed in the bed joints of blockwork to provide extra strength?

- a. Reinforced steel bar.
- b. Expanded metal lath.
- c. Stainless steel wall ties.
- d. Wall starter systems.

**Key: B**

10

What is the main purpose of an oversailing course on a chimney stack?

- a. To help shed water away from the stack.
- b. It will provide extra strength to hold the chimney pot.
- c. It is only there as a decorative feature.
- d. To increase draw of fumes up the chimney.

**Key: A**

11

List **three** renewable energy systems used on domestic dwellings.

(3 marks)

**Answer**

Answer could include any **three** of the following for a maximum of **three** marks

- Solar panels.
- Photovoltaic.
- Ground source heat.
- Air source heat.
- Wind turbines
- Grey or green water systems.

12

You have been asked to prepare a quote to build the brickwork for a small extension.

Explain what should be included in the quote and explain why.

(5 marks)

**Answer**

Candidate will be awarded a mark per item listed up to a maximum of **two** marks.

Candidate will be awarded a mark per justification up to a maximum of **three** marks.

Any other suitable answer accepted

- Labour (1 mark, with justification)
- Materials, ( Materials is one item) (1 mark, with justification)
- Overheads (1 mark, with justification)
- Plant (1 mark, with justification)
- equipment (1 mark, with justification)
- Profits (1 mark, with justification)
- VAT (1 mark, with justification)
- Health and Safety (1 mark, with justification)
- Waste disposal (1 mark, with justification)

13

Identify **four** points for consideration prior to using independent scaffold. (4 marks)

**Answer**

Answer could include any **four** of the following for a maximum of **four** marks

- Safe access and egress ( Ladder safety )
- Standards not too far apart
- Firm base
- No swaying ( tied if necessary) and braced
- Correct fittings used
- Correct height for task
- Wide enough for task
- Fittings are secure
- Guarding in place and correct height, necessary signage in place.

14

Horizontal cracks are showing at regular intervals on the bed joints of a cavity wall. Explain reasons for this defect and how it could be rectified. (6 marks)

**Answer**

Candidate will be awarded a mark per reason given to a maximum of **two** marks

Candidate will be awarded a mark per remedy given to a **maximum** of four marks

Any other suitable answer accepted

**Reason**

- There would be horizontal cracks in the bed joints, every six course of bricks around the external envelope of the house. **(1 mark)**
- Galvanised steel wall ties rusting, swelling and lifting the brickwork. **(1 mark)**

**Remedy**

- Isolate old wall ties so further rusting doesn't occur. **(1 mark)**
- Remove brick of bricks and all wall ties **(1 mark)**
- Drill and fix new wall ties. **(1 mark)**
- Replacing the bricks with matching bricks and mortar. **(1 mark)**

15

Identify **four** pieces of tools and equipment that can be used to build a battered brick wall.

(4 marks)

**Answer**

Answer could include any **four** of the following for a **maximum** of **four** marks

Any other suitable answer accepted

- Batter boards
- Tapered straight edge
- Temporary profiles
- String lines
- Level
- Tape measure/Gauge

16

Explain how to establish the striking point for a segmental arch.

(6 marks)

**Answer**

Candidate will awarded a mark per stage in the process up to a **maximum** of **six** marks.

Any other suitable answer accepted

1. Set the span of the arch **(1 mark)**
2. Construct a vertical in the centre line **(1 mark)**
3. Mark the rise of the arch **(1 mark)**
4. Draw the bisecting line **(1 mark)**
5. Bisect the line **(1 mark)**
6. Join the bisectors to meet the vertical establishing the striking point.**(1 mark)**

Identify **two** examples each of where reinforcement could be used when positioned

- i) horizontally (2 marks)  
ii) vertically. (2 marks)

### Answers

- i) Answers could include any **two** of the following for **two** marks.  
Any other suitable answer accepted

#### Horizontally

- Over a window opening
- arch design
- decorative panel work
- stack bonding
- retaining walls

- ii) Answers could include any **two** of the following for **two** marks  
Any other suitable answer accepted

#### Vertically

- Quetta bond
- retaining walls
- farm building
- block work

A client has requested that you provide a range of bonding patterns for decorative panels. Compare the advantages and disadvantages of **two** bonding arrangements that could be used. (10 marks)

### Answer

Candidate will score a maximum of

- **2 marks** for identifying the bonding arrangement shown in bold 1 mark per bond
- **2 marks** for 1 advantage, **2 marks** for 1 disadvantage for each bonding

Any other suitable answer accepted

### Basket weave

- cost effective
- easy to construct
- less waste
- less ornate
- needs bed reinforcement

### Herringbone

- very decorative (a)
- 
- time consuming (dis)
- difficult to cut (dis)
- high level of waste dis)
- most expensive

### Diagonal herringbone

- very decorative
- time consuming
- difficult to cut
- high level of waste
- most expensive

### Diagonal stretcher bond

- very decorative
- time consuming
- difficult to cut
- high level of waste



19

Give the **two main** reasons for flaunching the top of a chimney stack.

(2 marks)

**Answer**

Answers as follow for **two** marks, **one** mark for **each**

Any other suitable answer accepted.

- secure the chimney pot
- allow egress of water from the top of the chimney stack

20

Explain why flue liners should be laid with the socket uppermost.

(4 marks)

**Answer**

Explanation to include similar answers as stated for **four** marks.

Any other suitable answer accepted

- To prevent moisture containing carbon deposits (**1 mark**) from seeping through the joints of the flue liner into the joints of the masonry (**1 mark**)
- Carbon would break down the joints (**1 mark**) of the masonry and weaken the structure of the stack (**1 mark**)
- Staining of internal wall finish ( also accepted)

A chimney stack on an old house is leaning and in a poor state of repair. It is essential that its appearance does not alter after it is taken down and re built. The work includes several decorative features including diagonal basket weave, over sailing courses, ramped work and string courses. Special bricks such as squints and dog legs are also required.

Discuss the considerations when approaching this tasks.

(12 marks)

### Answer

#### Indicative content

#### Considerations

- Health and Safety regulations which would apply to this job.
- Building and planning regulations
- The gauge of the mortar
- COSHH
- Protection of residents and equipment
- Materials and costing
- Matching existing materials
- Planning work activities
- Access equipment
- Waste disposal
- PUWER
- Lifting and removal of materials
- Flashing
- Internal and external protection

#### Band 1 ( 1-4 marks)

Response is basic and shows limited understanding of the tasks needed to complete the work. Does not follow the stages in correct order of work with little reference to regulations. Makes little reference to working at height, material handling, matching existing and removal of waste. No consideration given to protection related to the property and affected areas.

To access higher marks candidates should have included some of the items in the stages but not in the correct order

#### Band 2 (5-8 marks)

Response shows some understanding of the tasks and sequence of work, but doesn't show clear links between tasks. Mentions regulations and safety, but no great depth to the answer. Makes some reference to working at height, material handling, matching existing and removal of waste. Some consideration given to protection related to the property and affected areas.

To access higher marks candidates have considered regulations and followed a logical sequence of work

#### Band 3 ( 9-12 Marks)

Response shows good understanding of the tasks and sequence of work, and show's clear links between tasks. Mentions regulations and safety, indicating a good depth to the answer. Makes clear reference to working at height, material handling, matching existing and removal of waste. Thorough consideration given to protection related to the property and affected areas.

To access higher marks candidates have shown a clear understanding of the tasks and considered all the regulations.