

Please check the examination details below before entering your candidate information

Candidate surname

Other names

**Pearson BTEC
Level 1/Level 2
First Award**

Centre Number

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Learner Registration Number

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Thursday 16 May 2019

Afternoon (Time: 1 hour)

Paper Reference **21492E**

**Construction and the Built
Environment**

Unit 1: Construction Technology

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 50.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Pearson

Answer ALL questions.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 Buildings are designed to meet particular performance requirements.

(a) Draw a line to match each component/material to its performance requirement.

Each component/material has only **one** performance requirement.

(2)

Component/Material

Performance requirement

Guttering

Sheep's wool

Thermal insulation

Fire protection

Strength

Stability

Weather resistance

(b) Identify **two** types of thermal insulation.

(2)

- A** Flashings
- B** Glass fibre
- C** Purlins
- D** Wall plate
- E** Cellulose

(c) State **one** purpose of sound insulation.

(1)

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(Total for Question 1 = 5 marks)



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2 State **one** way that new houses can be designed to maximise natural light.

(1)

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(Total for Question 2 = 1 mark)

3 The substructure work of construction projects needs to be completed safely.

(a) Name **two** methods of earthwork support used to prevent the sides of an excavation collapsing.

(2)

1

.....

2

.....

(b) Identify **two** underground services that require locating and protecting before work can begin on site.

(2)

- A Materials
- B Water
- C Restraints
- D Electricity
- E Downpipes

(Total for Question 3 = 4 marks)

4 Identify **two** types of foundation.

(2)

- A Pile
- B Hip
- C Dormer
- D Strip
- E Gable

(Total for Question 4 = 2 marks)



5 Diagram 1 shows a section through a pitched roof.

Label the **five** components of the roof shown in Diagram 1.

(5)

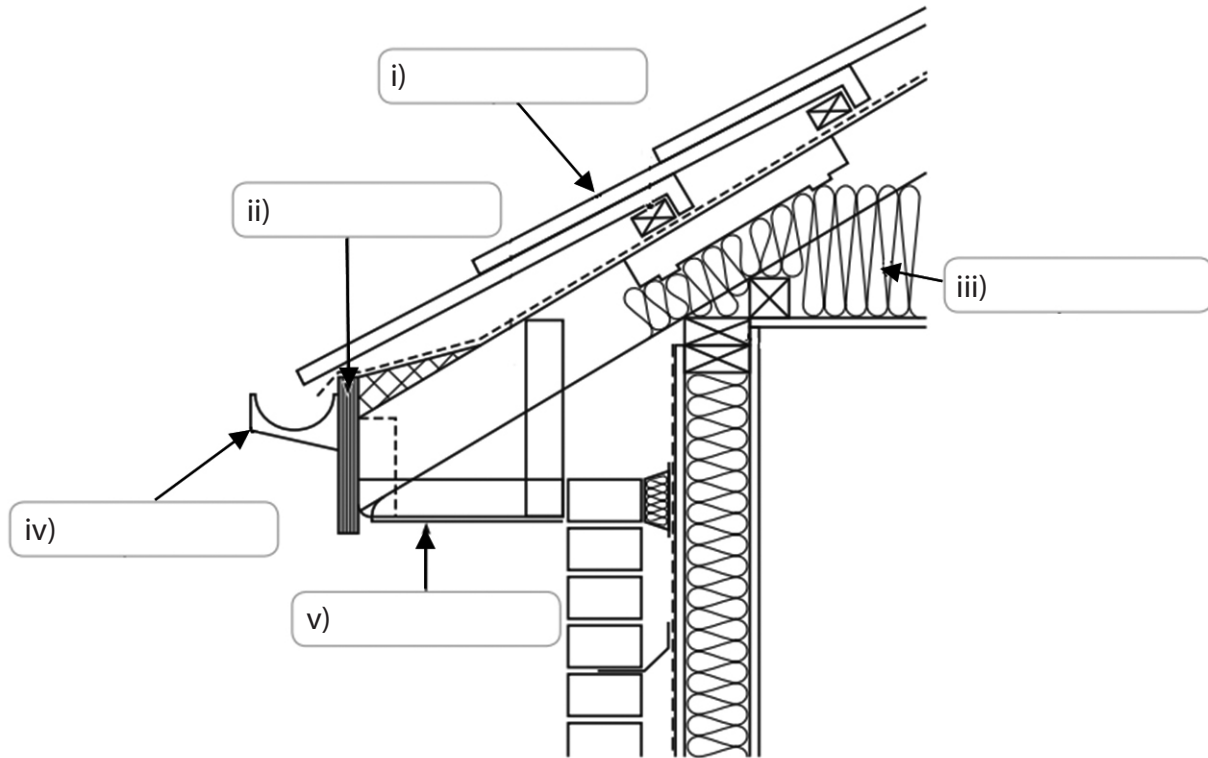


Diagram 1

(Total for Question 5 = 5 marks)

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6 (a) Identify **two** functions of a wall opening.

(2)

- A Provide restraint
- B Provide stability
- C Provide ventilation
- D Provide strength
- E Provide light

(b) Sketch a diagram of a cross-section through a traditional cavity wall.

You **must** annotate your diagram.

(4)

(Total for Question 6 = 6 marks)



P 6 1 5 4 9 A 0 5 1 2

7 (a) Name **one** type of internal floor finish.

(1)

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(b) Explain **two** advantages of a solid ground floor.

(4)

1

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2

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(c) An architect is designing a low-rise office building and is considering two types of ground floor.

Explain **two** advantages of using a beam and block floor instead of a suspended timber ground floor.

(4)

1

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2

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(Total for Question 7 = 9 marks)

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8 Explain **two** advantages of using engineered timber joists instead of solid timber joists for the construction of the upper floors in a building.

(4)

1

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2

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(Total for Question 8 = 4 marks)

9 Brickwork and vertical tile hanging are two external cladding options.
Explain **one** disadvantage of vertical tile hanging compared to brickwork.

(2)

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(Total for Question 9 = 2 marks)

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10 A property developer is proposing to develop a housing estate using a prefabricated concrete cross-wall structural form.

Explain **two** economic benefits to the developer of using this structural form of construction.

(4)

1

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2

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(Total for Question 10 = 4 marks)

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(Total for Question 11 = 8 marks)

TOTAL FOR PAPER = 50 MARKS



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