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Pearson BTEC  
Level 1/Level 2  
First Award

Centre Number	Learner Registration Number
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# Construction and the Built Environment

## Unit 1: Construction Technology

Friday 8 January 2016 – Morning <b>Time: 1 hour</b>	Paper Reference <b>21492E</b>
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<b>You do not need any other materials.</b>	Total Marks
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### 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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**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** Draw a line to match each building component/element to its associated performance requirement.

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

<b>Component/Element</b>	<b>Performance requirement</b>
<input type="text" value="Soffit"/>	<input type="text" value="Strength"/>
<input type="text" value="Sprinkler system"/>	<input type="text" value="Fire protection"/>
	<input type="text" value="Weather resistance"/>
	<input type="text" value="Sustainability"/>
	<input type="text" value="Sound insulation"/>

**(Total for Question 1 = 2 marks)**

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2 (a) Give **two** purposes of sound insulation.

(2)

1 .....

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2 .....

.....

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

(2)

- A Carpeting
- B Damp-proof course
- C Flashings
- D Triple glazed window
- E Fascia

**(Total for Question 2 = 4 marks)**

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3 (a) Give **two** reasons for the need for sustainability in construction.

(2)

1 .....

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2 .....

.....

(b) Identify **two** sustainable methods used in construction.

(2)

- A** Fire precaution measures
- B** Prefabrication of elements
- C** Installation of earthwork support
- D** Organisation of safety signs
- E** Use of local suppliers

(c) Name **two** low embodied energy materials used in construction.

(2)

1 .....

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2 .....

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**(Total for Question 3 = 6 marks)**

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4 (a) Name **two** external finishes used with structural insulated panels (SIPs).

(2)

1 .....

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2 .....

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(b) Explain **two** benefits of using structural insulated panels (SIPs) rather than a traditional construction form for a housing development.

(4)

1 .....

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2 .....

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(Total for Question 4 = 6 marks)

5 State **one** way loads are transferred from the roof of a building to its foundation.

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(Total for Question 5 = 1 mark)

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6 (a) Give **two** factors to be considered when designing earthwork support.

(2)

1 .....

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2 .....

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(b) Sketch a diagram to show the timbering method of earthwork support for a trench.

(4)

You should annotate your diagram.

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(Total for Question 6 = 6 marks)



7 Diagram 1 shows a section through a pitched roof at eaves level.

Label the parts of the pitched roof shown in Diagram 1.

(5)

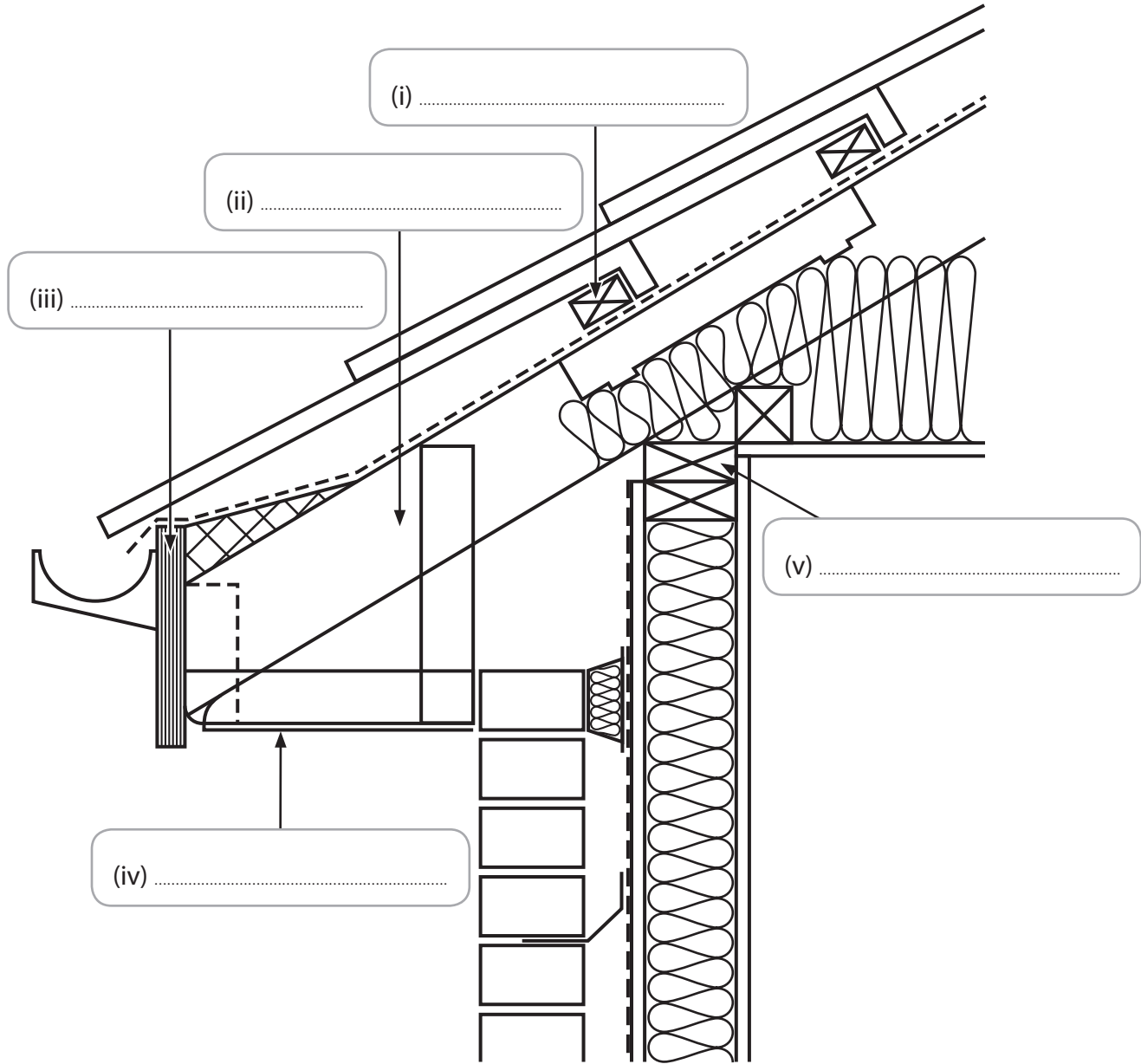


Diagram 1

(Total for Question 7 = 5 marks)



P 4 7 0 8 7 A 0 7 1 2

8 Identify **two** components of a wall opening.

- A Weephole
- B Skirting
- C Ridgeboard
- D Lintel
- E Gable

(Total for Question 8 = 2 marks)

9 Explain **two** benefits of using a traditional brick cavity wall construction method when building houses.

1 .....

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2 .....

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(Total for Question 9 = 4 marks)

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**10** A single storey extension is to be added to a three bedroom semi-detached house.  
Explain **two** advantages of a flat roof compared to a pitched roof for the extension.

1 .....

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2 .....

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**(Total for Question 10 = 4 marks)**

**11** Explain **one** way in which timber frame construction minimises the impact on the natural environment.

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**(Total for Question 11 = 2 marks)**

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**(Total for Question 12 = 8 marks)**

**TOTAL FOR PAPER = 50 MARKS**



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