

Write your name here

Surname					Other names				
Centre Number					Learner Registration Number				
<b>Pearson BTEC</b> <b>Level 1/Level 2</b> <b>First Award</b>									

# Construction and the Built Environment

## Unit 1: Construction Technology

Friday 9 January 2015 – Morning <b>Time: 1 hour</b>	Paper Reference <b>21492E</b>
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<p><b>You do not need any other materials.</b></p>	<p>Total Marks</p>
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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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**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** Identify **two** preconstruction stage legal requirements.

- A** Informing the Health and Safety Executive (HSE)
- B** Reduction in construction wastage
- C** Prefabrication of elements
- D** Designing for functionality
- E** Risk assessments

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

**2** The installation of site accommodation is a site-based preconstruction activity carried out at the set-up stage.

Name **two** other site set-up activities required before construction work begins.

1 .....

.....

2 .....

.....

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



3 (a) Identify **two** fire-resistant materials.

(2)

- A Plasterboard
- B Blockwork
- C Bitumen
- D Timber
- E Straw

(b) Buildings are insulated in order to reduce heat loss.

Identify **two** locations where thermal insulation may be installed.

(2)

1 .....

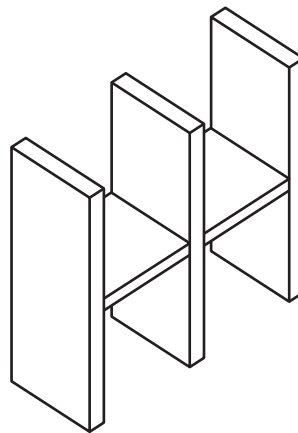
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2 .....

.....

(c) The diagram shows a structural form used in the construction of low-rise buildings.

(1)



Identify this structural form.

- A Internal partitions
- B Timber frame
- C Cavity wall
- D Cross-wall

(Total for Question 3 = 5 marks)



4 Name **two** types of pointing used in facing brickwork.

1 .....

.....

2 .....

.....

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

5 There are many hazards associated with sub-structure groundwork activities, such as damaging existing underground services.

(a) Identify **two** other hazards associated with sub-structure groundworks.

**(2)**

1 .....

.....

2 .....

.....

To enable construction work to start, existing services need to be located and protected.

(b) Explain **two** ways to locate existing underground electric cables.

**(4)**

1 .....

.....

2 .....

.....

(c) Name **one** method used to permanently control sub-soil water.

**(1)**

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.....

**(Total for Question 5 = 7 marks)**



6 Diagram 1 shows a sub-structure detail of a suspended timber ground floor.

Label the components of the suspended timber ground floor shown in Diagram 1.

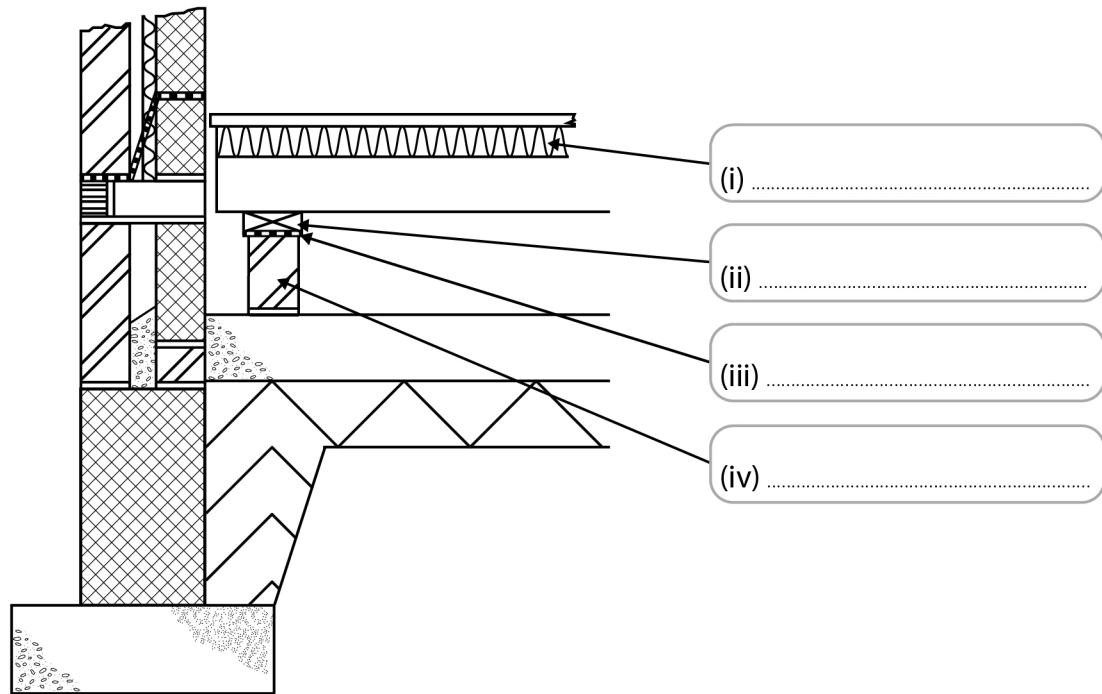


Diagram 1

(Total for Question 6 = 4 marks)



7 Sketch a diagram of a cross section through a timber flat roof construction form.  
You should annotate your diagram.

(Total for Question 7 = 5 marks)



8 A low-rise building project is taking place on a brownfield site.

(a) Explain **one** benefit to the environment of recycling the bricks from the brownfield site as hardcore for the new building.

(2)

.....

.....

.....

(b) Define the term embodied energy.

(1)

.....

.....

(c) Explain **one** way in which each of the methods below can contribute towards a building's sustainability.

(4)

Building orientation

.....

.....

.....

Prefabricated elements

.....

.....

.....

**(Total for Question 8 = 7 marks)**



9 Explain **two** reasons why high-density blockwork is used in walls where sound insulation is required.

1 .....

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2 .....

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.....

**(Total for Question 9 = 4 marks)**

10 Sections of a new build office building will be rented to different businesses.

The internal partitions will be constructed using metal studs.

Explain **two** reasons why metal studs are suitable for this office building.

1 .....

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2 .....

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









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