

Write your name here

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

Construction and the Built Environment

Unit 1: Construction Technology

Wednesday 21 May 2014 – Morning Time: 1 hour	Paper Reference 21492E
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You do not need any other materials.	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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Some questions must be answered with a cross ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Answer ALL questions.

1 Low-rise buildings have particular performance requirements.

(a) Match the material to its performance requirement for low-rise buildings.

(2)

Draw a straight line to match each material to its associated performance requirement.

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

Material	Performance requirement
Flashings	Strength
Sheep's wool	Thermal insulation
	Stability
	Security
	Weather resistance

(b) Complete the sentence about slump tests.

Put a cross ☒ in **one** box to indicate your answer.

A slump test is used to measure a property of:

(1)

- A steel
- B concrete
- C mortar
- D hardcore



(c) Complete the sentence about stress grading.

Put a cross ☒ in **one** box to indicate your answer.

Stress grading indicates the strength of:

(1)

- A** mortar
- B** blocks
- C** bricks
- D** timber

(d) One purpose of sound insulation is to resist the passage of sound through a building.

Identify **two** other purposes of sound insulation for a building.

(2)

1

.....

2

.....

(e) Describe **one** benefit of using sheep's wool in construction projects.

(2)

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(Total for Question 1 = 8 marks)



2 (a) Identify **two** temporary earthwork support methods used to prevent the collapse of the sides of an excavation.

Put a cross ☒ in **two** boxes to indicate your answers.

(2)

- A** Joists
- B** Wall-tie spacing
- C** Timbering
- D** Steel trench sheets
- E** Skirtings

(b) Identify **one** method used for the temporary control of surface water in excavations.

(1)

(Total for Question 2 = 3 marks)

3 Before construction works start, activities will take place in the office (desk-based) and on site (site-based).

Match the type of preconstruction work to its activity.

Draw a straight line to match each type of preconstruction work to the appropriate activity.

Each type of preconstruction work has only **one** activity.

Type of preconstruction work

Activity

Desk-based preconstruction

Site-based preconstruction

Scaled site layout plan

Excavation for foundations

Engineering brickwork to dpc

Gates and security of the site

Fix wall plates

(Total for Question 3 = 2 marks)



4 (a) One function of a wall is to reduce sound transmission.

Identify **two** other functions of a wall.

(2)

1

.....

2

.....

(b) Outline the function of a lintel.

(1)

.....

.....

(c) Identify **two** types of wall finishes that could be used on a building.

Put a cross in **two** boxes to indicate your answers.

(2)

- A** Metal stud
- B** Rendered blockwork
- C** Bitumen felt
- D** Facing brickwork
- E** Mineral wool

(Total for Question 4 = 5 marks)



5 *XYZ Homes* is a building contractor.

During the excavation of foundations on a large housing development site an *XYZ Homes* employee cut into an underground power cable.

Explain **two** measures that *XYZ Homes* could have put in place to reduce the risk of damaging underground power cables.

1

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2

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(Total for Question 5 = 4 marks)



6 There are several components of a roof structure.

(a) Label the components of the roof structure shown in Diagram 1.

(4)

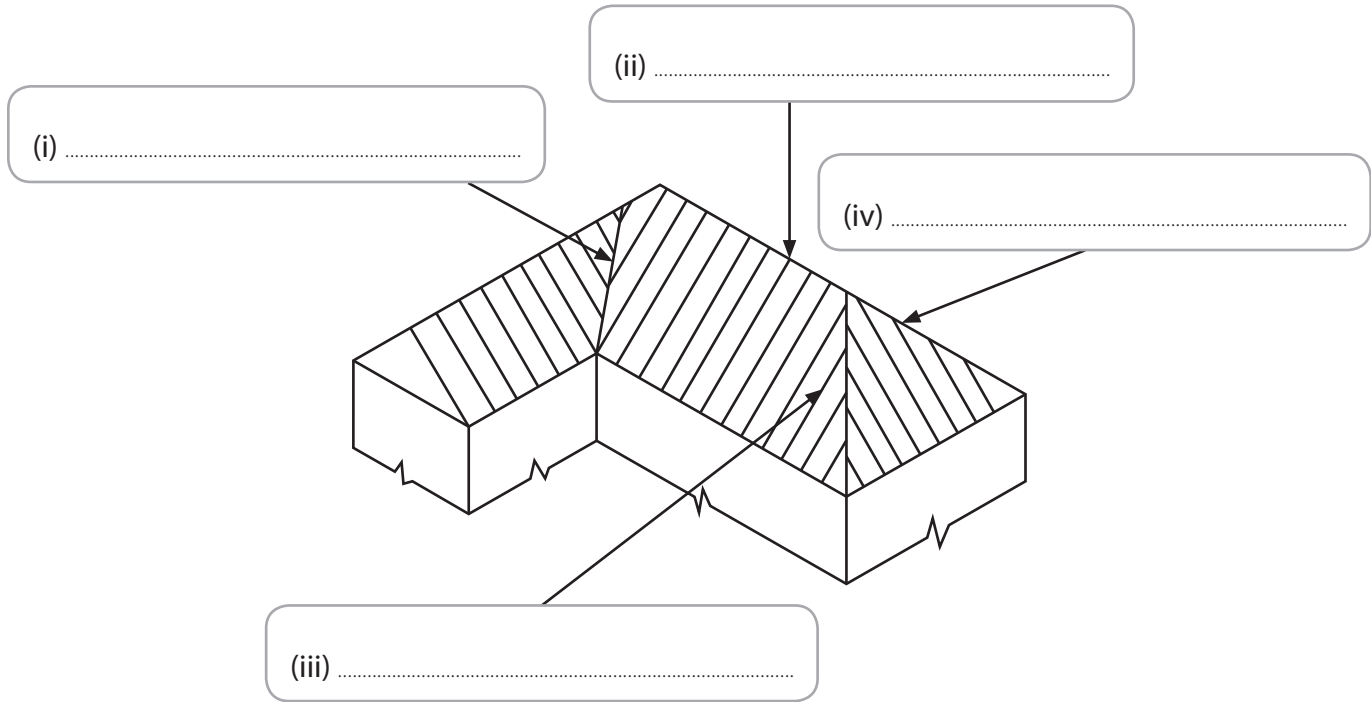


Diagram 1

(b) Trussed rafters are used in house construction.

Identify the material used to manufacture trussed rafters.

Put a cross ☒ in **one** box to indicate your answer.

(1)

- A Plywood
- B Softwood
- C Hardwood
- D Chipboard

(Total for Question 6 = 5 marks)



- 7 Sketch a diagram of a cross section through a solid ground floor.
You should annotate your diagram.

(Total for Question 7 = 5 marks)



8 Solid ground floors are often used in low-rise buildings as they can be constructed in a short period of time.

Explain **two** other advantages of a solid ground floor in a low rise-building.

1

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2

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(Total for Question 8 = 4 marks)



9 Engineered timber joists are often used in the construction of the upper floors of low-rise buildings.

Explain **two** benefits of using engineered timber joists in the construction of the upper floors of low-rise buildings.

1

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2

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(Total for Question 9 = 4 marks)

10 Explain **one** reason why timber frame housing is a sustainable form of construction.

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(Total for Question 10 = 2 marks)





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