

Write your name here

Surname

Other names

Edexcel
Principal Learning

Centre Number

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Candidate Number

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Construction and the Built Environment
Level 1
Unit 4: Create the Built Environment: Methods and Materials

Tuesday 22 May 2012 – Morning
Time: 1 hour

Paper Reference

CB104/01

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 candidate 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 60.
- 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.
- Keep an eye on the time.
- 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 ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

- 1** You have decided to investigate the qualifications needed to carry out different jobs in construction.

In the table below indicate which of the job roles identified would normally require a qualification at degree level by putting a cross ☒ in the correct boxes.

You should put a cross in **five** boxes only.

A	Building Surveyor	<input type="checkbox"/>
B	Quantity Surveyor	<input type="checkbox"/>
C	Electrician	<input type="checkbox"/>
D	Steeplejack	<input type="checkbox"/>
E	Building Services Engineer	<input type="checkbox"/>
F	Bricklayer	<input type="checkbox"/>
G	Plant Operative	<input type="checkbox"/>
H	Architect	<input type="checkbox"/>
I	Ganger	<input type="checkbox"/>
J	Structural Engineer	<input type="checkbox"/>

(Total for Question 1 = 5 marks)



2 You have started working with a construction company and are based in the human resources office to learn more about different job roles, qualifications and professional bodies.

Put a cross ☒ in the box next to the correct word(s) to complete each of the sentences below.

(a) Construction craft workers would normally be expected to hold a:

(1)

A	Degree	<input type="checkbox"/>
B	National Vocational Qualification (NVQ)	<input type="checkbox"/>
C	Higher National qualification	<input type="checkbox"/>

(b) Most architects would be members of the:

(1)

A	RIBA	<input type="checkbox"/>
B	RICS	<input type="checkbox"/>
C	CIOB	<input type="checkbox"/>

(c) Workers on construction sites should be accredited under the Construction Skills Certification:

(1)

A	Schedule	<input type="checkbox"/>
B	Service	<input type="checkbox"/>
C	Scheme	<input type="checkbox"/>

(d) Quantity surveyors would normally be members of the:

(1)

A	CIAT	<input type="checkbox"/>
B	RICS	<input type="checkbox"/>
C	RSPB	<input type="checkbox"/>



(e) Which **one** of the following roles is classed as a specialist trade?

(1)

A	Shopfitter	<input type="checkbox"/>
B	Electrician	<input type="checkbox"/>
C	Drain layer	<input type="checkbox"/>

(Total for Question 2 = 5 marks)



3 You are now working with the Plant Manager to learn about different construction plant.

Identify each of the following images by putting a cross ☒ in the correct box.

(a)



(1)

A	Excavator	<input type="checkbox"/>
B	Bulldozer	<input type="checkbox"/>
C	Dumper	<input type="checkbox"/>

(b)



(1)

A	Rough terrain forklift	<input type="checkbox"/>
B	Telescopic handler	<input type="checkbox"/>
C	Mobile working platform	<input type="checkbox"/>



(c)



(1)

A	Skip truck	<input type="checkbox"/>
B	Loading shovel	<input type="checkbox"/>
C	Dumper	<input type="checkbox"/>

(d)



(1)

A	Telescopic handler	<input type="checkbox"/>
B	Tower crane	<input type="checkbox"/>
C	Mobile crane	<input type="checkbox"/>

(Total for Question 3 = 4 marks)



4 You are having a review with your manager who is testing your knowledge of construction materials.

Put a cross ☒ in the box next to the correct word(s) to complete each of the sentences below.

(a) PVC is a type of:

(1)

A	timber	<input type="checkbox"/>
B	plastic	<input type="checkbox"/>
C	metal	<input type="checkbox"/>

(b) Timber portal frames can be constructed using:

(1)

A	MDF	<input type="checkbox"/>
B	chipboard	<input type="checkbox"/>
C	glued laminated beams	<input type="checkbox"/>

(c) It is essential when constructing cavity walls to include a damp proof:

(1)

A	cover	<input type="checkbox"/>
B	course	<input type="checkbox"/>
C	case	<input type="checkbox"/>

(d) Heavy duty polythene sheeting is normally used to provide a:

(1)

A	DPM	<input type="checkbox"/>
B	DPC	<input type="checkbox"/>
C	DMC	<input type="checkbox"/>



(e) Concrete is often reinforced using:

(1)

A	timber	<input type="checkbox"/>
B	lead	<input type="checkbox"/>
C	steel	<input type="checkbox"/>

(Total for Question 4 = 5 marks)



P 4 0 4 5 8 A 0 9 2 4

5 You are working with the Sustainability Officer to learn about factors that can influence a building's sustainability.

Below on the left there is a list of factors and on the right is a list of impacts. Connect the factor on the left with the impact on the right by drawing a straight line to link them.

Each impact should only be used once.

Factor

Impact

Low cost materials

Reduce transport emissions

High level of insulation

Reduce initial cost

Locally sourced materials

Reduce on-site time

In situ concrete frame

Increase energy usage

Off-site prefabrication

Reduce heating costs

Increase on-site time

(Total for Question 5 = 5 marks)



6 You are working on-site and learning about where different construction materials/components are used.

Below on the left there is a list of materials/components and on the right is a list of applications. Connect the material/component on the left with the application on the right by drawing a straight line to link them.

Each application should only be used once.

Material/Component

Application

Foamglass

Cold water pipes

DPM

Domestic roofs

Copper

Insulation

Lead

Roof flashing

Trussed rafters

Concrete floors

Domestic windows

(Total for Question 6 = 5 marks)



7 Whilst working on-site you are learning more about different types of plant and their uses.

In the table below, put a cross ☒ in the correct box to indicate whether each item of plant is used for moving materials, excavation works or finishing concrete.

	Moving materials	Excavation works	Finishing concrete
Beam screeder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Backactor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tower crane	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

(Total for Question 7 = 3 marks)



8 Working in the human resources department, you are furthering your knowledge of different job roles and classifications.

Below on the left there is a list of job roles and on the right is a list of classifications. Connect the job role on the left with the classification on the right by drawing a straight line to link them.

Each classification can be used more than once.

Job Role

Labourer

Assistant site engineer

Buyer

Floor layer

Thatcher

Classification

Technician

Operative

Specialist trade

(Total for Question 8 = 5 marks)



9 You are having your next review with your manager who is testing your general construction knowledge.

Put a cross ☒ in the box next to the correct word(s) to complete each of the sentences below.

(a) When forming door and window openings in cavity walls it is important to support the brickwork above by using a:

(1)

A	header course	<input type="checkbox"/>
B	coping	<input type="checkbox"/>
C	soldier course	<input type="checkbox"/>
D	lintel	<input type="checkbox"/>

(b) The primary function of a roof structure is to provide:

(1)

A	stability	<input type="checkbox"/>
B	shelter	<input type="checkbox"/>
C	insulation	<input type="checkbox"/>
D	aesthetics	<input type="checkbox"/>

(c) Items of plant that can be used for working at height include mobile working platforms, scissors lifts and:

(1)

A	cherry pickers	<input type="checkbox"/>
B	forklifts	<input type="checkbox"/>
C	tower cranes	<input type="checkbox"/>
D	mobile cranes	<input type="checkbox"/>



(d) Modern methods of construction include volumetric and:

(1)

A	cavity wall	<input type="checkbox"/>
B	solid wall	<input type="checkbox"/>
C	panelised	<input type="checkbox"/>
D	underground	<input type="checkbox"/>

(Total for Question 9 = 4 marks)



P 4 0 4 5 8 A 0 1 5 2 4

10 You are working with the Buyer to learn more about different construction materials.

In the table below, put a cross ☒ in the correct box to indicate whether each component is cement based, plastic based or wood based.

	Cement	Plastic	Wood
Concrete	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DPC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Blockboard	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
uPVC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Render	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

(Total for Question 10 = 5 marks)



11 You are working with the design team and considering the use of **sustainable** materials and methods.

Put a cross ☒ in the box next to the correct word(s) to complete each of the sentences below.

(a) Timber sourced from managed forests is considered to be a(n): (1)

A	cheap resource	<input type="checkbox"/>
B	energy efficient resource	<input type="checkbox"/>
C	renewable resource	<input type="checkbox"/>
D	recycled resource	<input type="checkbox"/>

(b) When specifying or buying materials it is important to consider the impact on the: (1)

A	environment	<input type="checkbox"/>
B	client	<input type="checkbox"/>
C	manufacturer	<input type="checkbox"/>
D	architect	<input type="checkbox"/>

(c) Materials purchased from local suppliers can usually be rated lower in terms of: (1)

A	cost	<input type="checkbox"/>
B	energy efficiency	<input type="checkbox"/>
C	structural stability	<input type="checkbox"/>
D	embodied energy	<input type="checkbox"/>

(d) Off-site prefabrication of building components can help to reduce: (1)

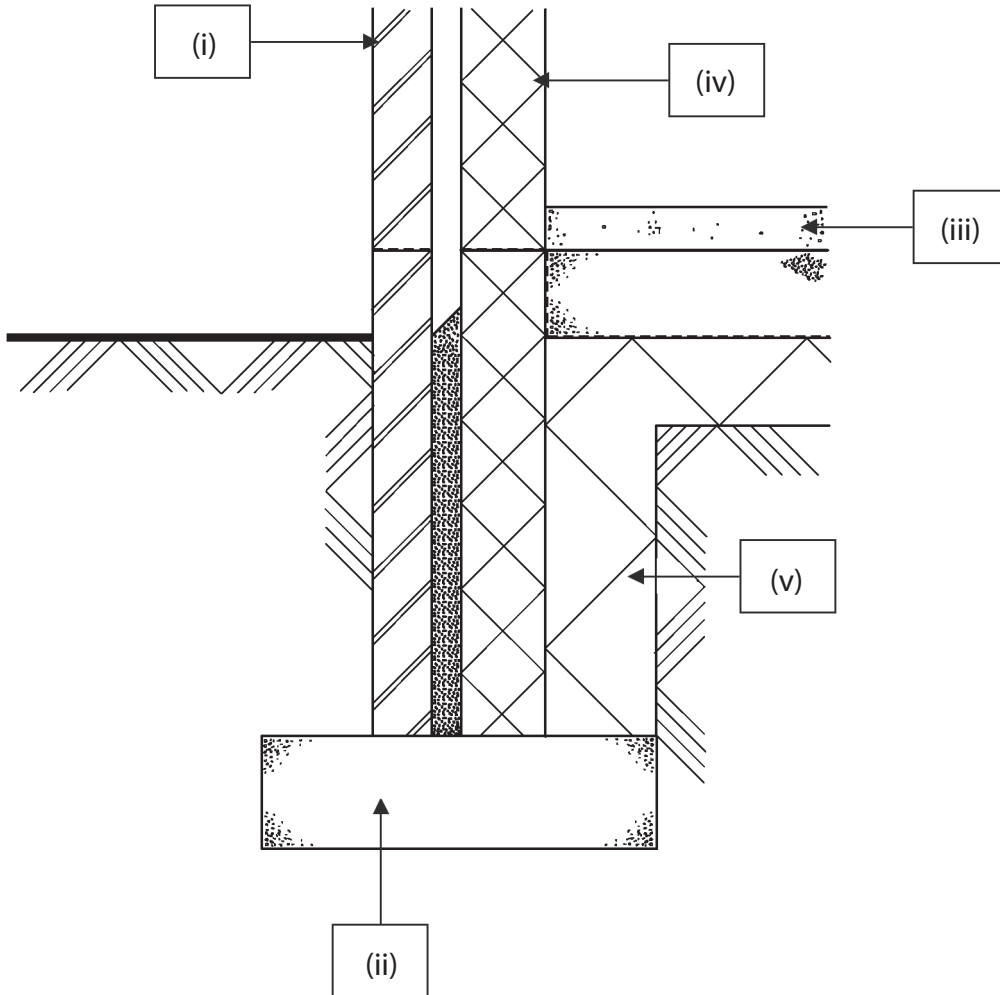
A	initial costs	<input type="checkbox"/>
B	maintenance requirements	<input type="checkbox"/>
C	on-site waste	<input type="checkbox"/>
D	life cycle cost	<input type="checkbox"/>

(Total for Question 11 = 4 marks)



12 You are working in the design office and learning how to read construction drawings.

The diagram below shows a section through a substructure. Identify the different materials labelled (i) to (v) by putting a cross ☒ next to the correct words in the tables below.



(a) Label (i) shows:

(1)

A	brickwork	<input type="checkbox"/>
B	plaster	<input type="checkbox"/>
C	blockwork	<input type="checkbox"/>
D	concrete	<input type="checkbox"/>



(b) Label (ii) shows:

(1)

A	screed	<input type="checkbox"/>
B	subsoil	<input type="checkbox"/>
C	concrete	<input type="checkbox"/>
D	DPC	<input type="checkbox"/>

(c) Label (iii) shows:

(1)

A	concrete	<input type="checkbox"/>
B	screed	<input type="checkbox"/>
C	subsoil	<input type="checkbox"/>
D	insulation	<input type="checkbox"/>

(d) Label (iv) shows:

(1)

A	insulation	<input type="checkbox"/>
B	brickwork	<input type="checkbox"/>
C	plaster	<input type="checkbox"/>
D	blockwork	<input type="checkbox"/>

(e) Label (v) shows:

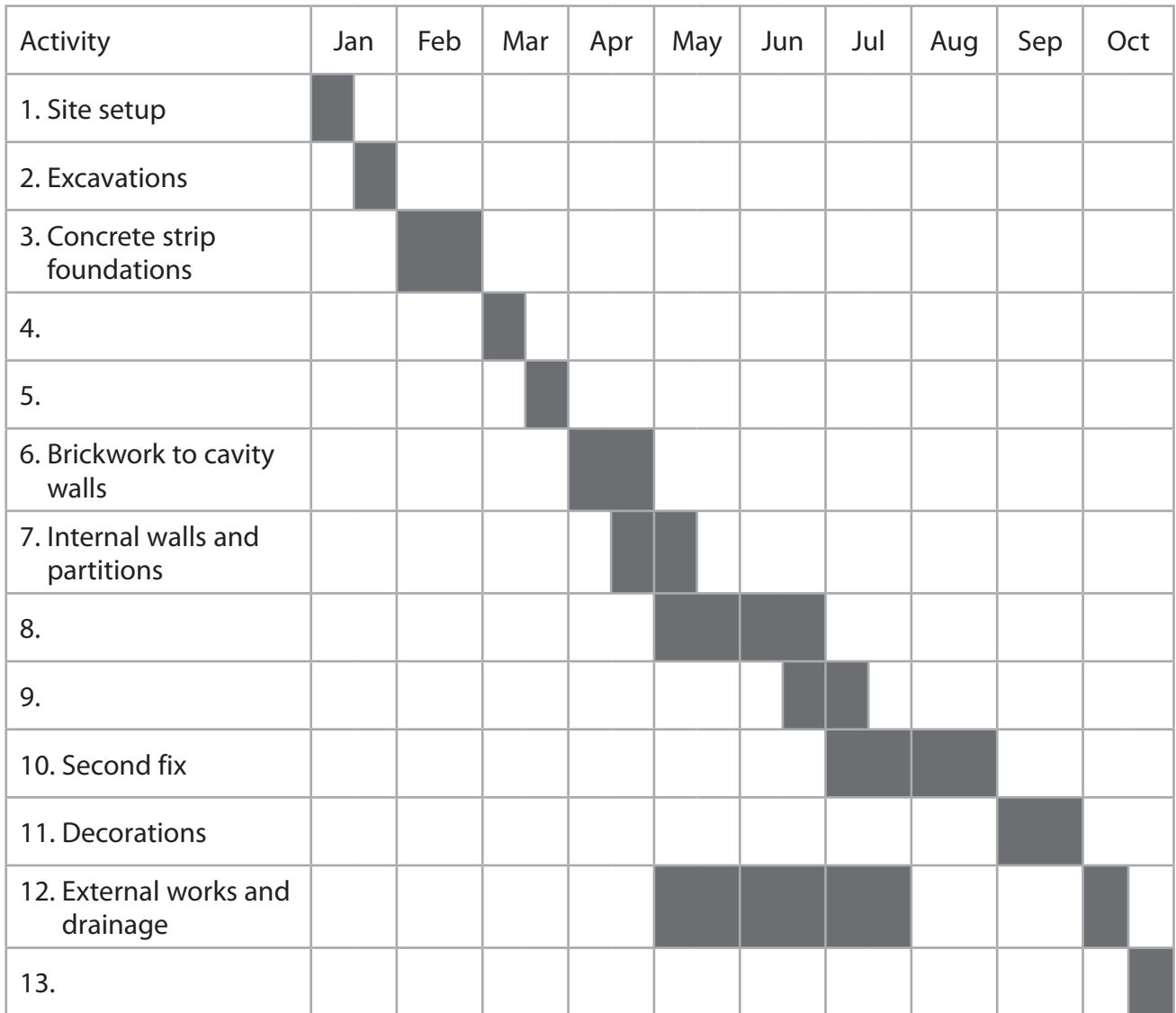
(1)

A	hardcore	<input type="checkbox"/>
B	subsoil	<input type="checkbox"/>
C	blockwork	<input type="checkbox"/>
D	DPC	<input type="checkbox"/>

(Total for Question 12 = 5 marks)



13 The Gantt chart below shows a programme for a construction project.



Identify the **five** missing activities by putting a cross ☒ in the correct box.

(a) Activity 4 is:

(1)

A	Piling	<input type="checkbox"/>
B	First lift scaffolding	<input type="checkbox"/>
C	Substructure brickwork	<input type="checkbox"/>
D	Wall tiling	<input type="checkbox"/>
E	Install kitchen	<input type="checkbox"/>



(b) Activity 5 is:

(1)

A	Construct stud partitions	<input type="checkbox"/>
B	Formwork	<input type="checkbox"/>
C	Plastering and dry lining	<input type="checkbox"/>
D	Commission heating system	<input type="checkbox"/>
E	Beam and block floor	<input type="checkbox"/>

(c) Activity 8 is:

(1)

A	Install bathroom suite	<input type="checkbox"/>
B	First fix	<input type="checkbox"/>
C	Commission heating system	<input type="checkbox"/>
D	Fit electrical switches	<input type="checkbox"/>
E	Plastering and dry lining	<input type="checkbox"/>

(d) Activity 9 is:

(1)

A	Internal finishes	<input type="checkbox"/>
B	Ground stabilisation	<input type="checkbox"/>
C	Fit electrical switches	<input type="checkbox"/>
D	Commission heating system	<input type="checkbox"/>
E	Snagging and handover	<input type="checkbox"/>

(e) Activity 13 is:

(1)

A	Third fix	<input type="checkbox"/>
B	Plastering and dry lining	<input type="checkbox"/>
C	Fix bathroom tiles	<input type="checkbox"/>
D	Snagging and handover	<input type="checkbox"/>
E	Install bathroom suite	<input type="checkbox"/>

(Total for Question 13 = 5 marks)

TOTAL FOR PAPER = 60 MARKS



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