

Write your name here

Surname	Other names
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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

Wednesday 11 January 2012 – Afternoon
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 different jobs in construction before choosing a career path.

In the table below indicate which of the job roles identified are classified as management or supervisory roles by putting a cross ☒ in the correct boxes.

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

A	Trade Foreman	<input type="checkbox"/>
B	Contract Manager	<input type="checkbox"/>
C	Plumber	<input type="checkbox"/>
D	Bricklayer	<input type="checkbox"/>
E	Electrician	<input type="checkbox"/>
F	Site Manager	<input type="checkbox"/>
G	General Foreman	<input type="checkbox"/>
H	Groundworker	<input type="checkbox"/>
I	Thatcher	<input type="checkbox"/>
J	Project Manager	<input type="checkbox"/>

(Total for Question 1 = 5 marks)



2 You have started work with a construction company and are working with the Plant Manager.

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

(a) Equipment used for excavating trenches is classed as:

(1)

A	power tools	<input type="checkbox"/>
B	mechanical plant	<input type="checkbox"/>
C	surveying equipment	<input type="checkbox"/>

(b) Forklifts and telescopic handlers are used for:

(1)

A	moving materials	<input type="checkbox"/>
B	working at height	<input type="checkbox"/>
C	excavation works	<input type="checkbox"/>

(c) Heavy materials can be moved around a construction site using a tower:

(1)

A	scaffold	<input type="checkbox"/>
B	crane	<input type="checkbox"/>
C	handler	<input type="checkbox"/>

(d) Poker vibrators are used when working with:

(1)

A	bricks	<input type="checkbox"/>
B	plaster	<input type="checkbox"/>
C	concrete	<input type="checkbox"/>



(e) Some items of construction plant combine shovels and:

(1)

A	backactors	<input type="checkbox"/>
B	floats	<input type="checkbox"/>
C	working platforms	<input type="checkbox"/>

(Total for Question 2 = 5 marks)



3 You are now working on-site and learning about the different tools and equipment used on construction projects.

Below are images of different tools and instruments. Identify who is most likely to use each tool or instrument by putting a cross ☒ in the box next to each correct answer.

(a)



(1)

A	Bricklayer	<input type="checkbox"/>
B	Electrician	<input type="checkbox"/>
C	Plumber	<input type="checkbox"/>

(b)

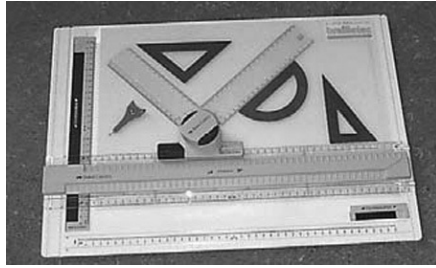


(1)

A	Plasterer	<input type="checkbox"/>
B	Ceiling fixer	<input type="checkbox"/>
C	Carpenter	<input type="checkbox"/>



(c)



(1)

A	Architect	<input type="checkbox"/>
B	Groundworker	<input type="checkbox"/>
C	Thatcher	<input type="checkbox"/>

(d)



(1)

A	Electrician	<input type="checkbox"/>
B	Carpenter	<input type="checkbox"/>
C	Steeplejack	<input type="checkbox"/>

(Total for Question 3 = 4 marks)



4 You are now working with the Buyer and learning about construction materials and components.

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

(a) Formwork for insitu concrete is normally constructed using:

(1)

A	copper	<input type="checkbox"/>
B	plywood	<input type="checkbox"/>
C	glass	<input type="checkbox"/>

(b) Most modern window frames are made from:

(1)

A	glass	<input type="checkbox"/>
B	stone	<input type="checkbox"/>
C	uPVC	<input type="checkbox"/>

(c) New houses can be built using brick and block:

(1)

A	solid walls	<input type="checkbox"/>
B	cavity walls	<input type="checkbox"/>
C	framed walls	<input type="checkbox"/>

(d) The vertical or upright sections of a steel framed structure are called the:

(1)

A	beams	<input type="checkbox"/>
B	rafters	<input type="checkbox"/>
C	columns	<input type="checkbox"/>



(e) Sand, cement, coarse aggregates and water are needed to mix:

(1)

A	concrete	<input type="checkbox"/>
B	mortar	<input type="checkbox"/>
C	screed	<input type="checkbox"/>

(Total for Question 4 = 5 marks)



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5 You are now working on-site and learning about materials and components.

Below on the left there is a list of materials/components and on the right is a list of locations where they are used. Connect the material/component on the left with the location on the right by drawing a straight line to link them.

Each location should only be used once.

Material/Component

Plasterboard

Lintel

Trussed rafter

Screed

Chipboard

Location

Pitched roofs

Concrete floors

Stud partitions

Timber floors

Guttering

Above openings

(Total for Question 5 = 5 marks)



6 You are working in the Human Resources department and learning more about different job roles.

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

Each job role may only be used once.

Job classification

Operative

Specialist trade

Craft

Technician

Management

Job role

Shopfitter

Planner

Ganger

Site Agent

Drain Layer

Electrician

(Total for Question 6 = 5 marks)



7 You are working with the Sustainability Officer to learn about the sustainable use of materials.

In the table below, put a cross ☒ in the correct box to indicate whether each material is recyclable, reusable or both.

	Recyclable	Reusable	Both
Timber	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Insitu concrete	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Glass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

(Total for Question 7 = 3 marks)



8 You are working in the general office to learn more about different materials/components and their sources.

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

Each type can be used more than once.

Material/Component

Type

Copper pipe

Plywood

Chipboard

Steel lintel

DPM (Damp proof membrane)

Timber

Plastic

Metal

(Total for Question 8 = 5 marks)



9 You are working with the Sustainability Officer to learn more about sustainable practices.

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

(a) Off-site prefabrication of components will normally help to improve:

(1)

A	wind resistance	<input type="checkbox"/>
B	aesthetics	<input type="checkbox"/>
C	quality	<input type="checkbox"/>
D	sound insulation	<input type="checkbox"/>

(b) The use of low maintenance materials during construction can help to reduce a building's:

(1)

A	life cycle cost	<input type="checkbox"/>
B	construction time	<input type="checkbox"/>
C	energy usage	<input type="checkbox"/>
D	value	<input type="checkbox"/>

(c) In sustainability terms, it is considered good practice to source materials from:

(1)

A	international suppliers	<input type="checkbox"/>
B	developing countries	<input type="checkbox"/>
C	reputable suppliers	<input type="checkbox"/>
D	renewable sources	<input type="checkbox"/>



(d) Off-site prefabrication of components will normally help to reduce on-site:

(1)

A	waste	<input type="checkbox"/>
B	aesthetics	<input type="checkbox"/>
C	quality	<input type="checkbox"/>
D	effectiveness	<input type="checkbox"/>

(Total for Question 9 = 4 marks)



10 You are working in the design office and learning about different methods of construction.

In the table below, put a cross ☒ in the correct box to indicate whether each component will be commonly used for steel framed construction, cavity wall construction or volumetric construction.

	Steel framed construction	Cavity wall construction	Volumetric construction
Butterfly ties	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Columns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Wall plates	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Prefinished modules	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Beams	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

(Total for Question 10 = 5 marks)



11 You are working in the general office and learning about sustainability issues.

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

(a) When designing and creating the built environment, it is considered good sustainable practice to engage in: (1)

A	competitive tendering	<input type="checkbox"/>
B	contract negotiations	<input type="checkbox"/>
C	disputes with the local planning committee	<input type="checkbox"/>
D	community liaison	<input type="checkbox"/>

(b) Good sustainable practice could include seeking out ways to use: (1)

A	cheap materials	<input type="checkbox"/>
B	alternative energies	<input type="checkbox"/>
C	skilled labour	<input type="checkbox"/>
D	fossil fuels	<input type="checkbox"/>

(c) To aid sustainability, appliances specified for new domestic buildings should always be: (1)

A	low noise	<input type="checkbox"/>
B	low cost	<input type="checkbox"/>
C	energy efficient	<input type="checkbox"/>
D	high maintenance	<input type="checkbox"/>

(d) Good sustainable practice on-site could include correct storage of materials and waste: (1)

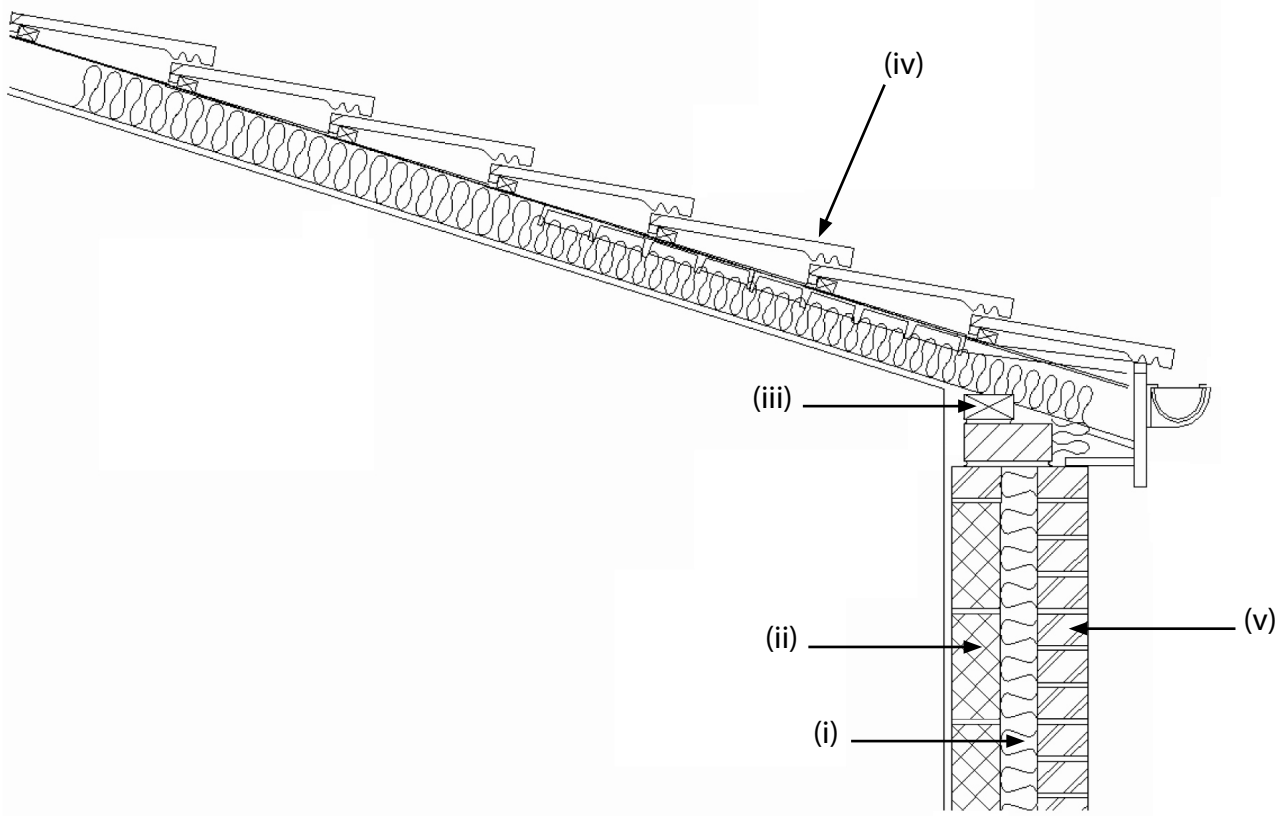
A	production	<input type="checkbox"/>
B	segregation	<input type="checkbox"/>
C	distribution	<input type="checkbox"/>
D	incineration	<input type="checkbox"/>

(Total for Question 11 = 4 marks)



12 You are working with the design team and learning how to read construction drawings.

The diagram below shows a section through a roof at eaves level. Identify the different parts labelled (i) to (v) by putting a cross ☒ next to the correct words in the tables below.



(a) Label (i) shows:

(1)

A	felt	<input type="checkbox"/>
B	eaves	<input type="checkbox"/>
C	insulation	<input type="checkbox"/>
D	sawn timber	<input type="checkbox"/>



(b) Label (ii) shows:

(1)

A	blockwork	<input type="checkbox"/>
B	damp proof course	<input type="checkbox"/>
C	brickwork	<input type="checkbox"/>
D	insulation	<input type="checkbox"/>

(c) Label (iii) shows:

(1)

A	hardwood	<input type="checkbox"/>
B	concrete	<input type="checkbox"/>
C	steel	<input type="checkbox"/>
D	sawn timber	<input type="checkbox"/>

(d) Label (iv) shows:

(1)

A	sawn timber	<input type="checkbox"/>
B	felt	<input type="checkbox"/>
C	tile	<input type="checkbox"/>
D	insulation	<input type="checkbox"/>

(e) Label (v) shows:

(1)

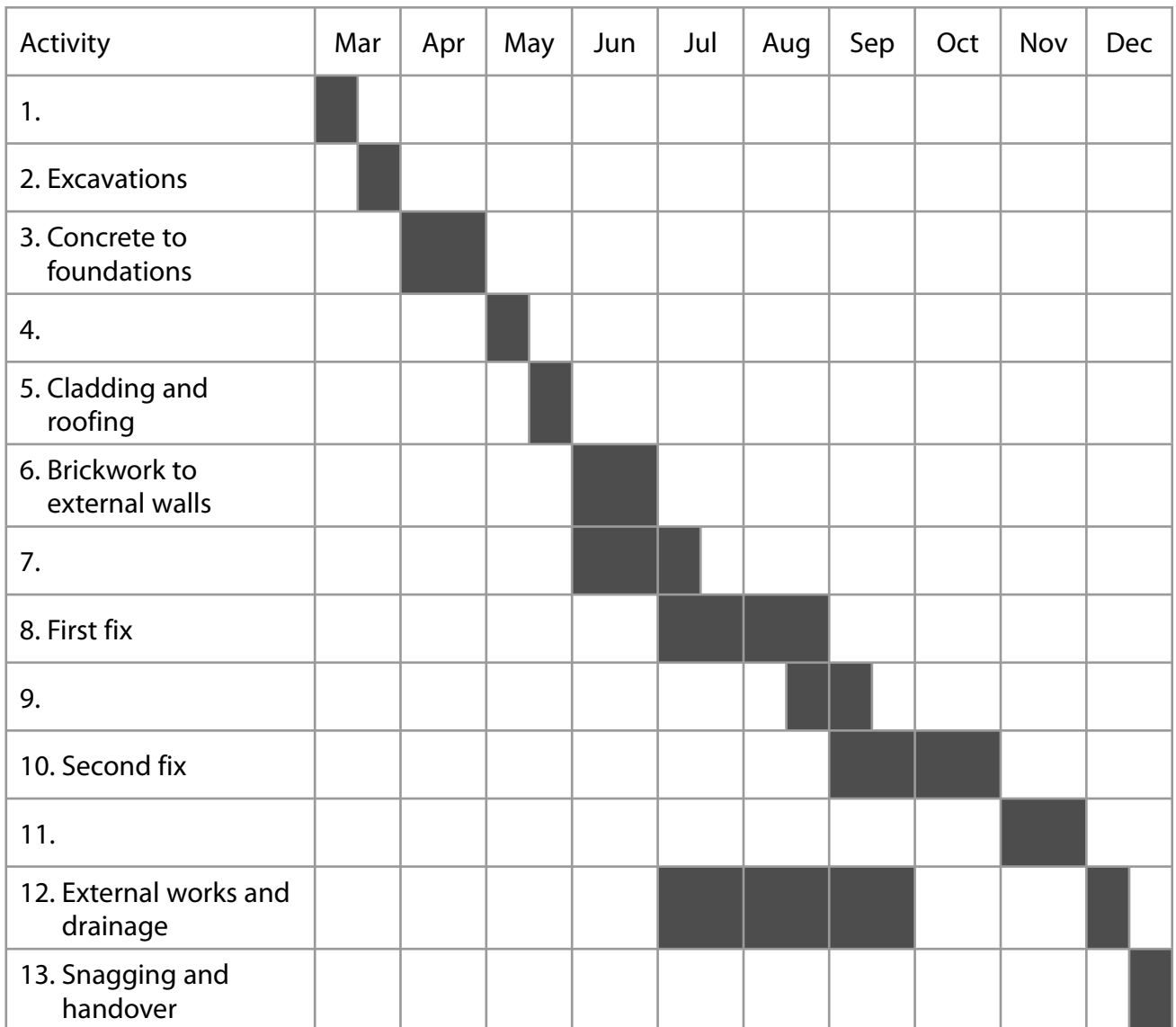
A	brickwork	<input type="checkbox"/>
B	insulation	<input type="checkbox"/>
C	blockwork	<input type="checkbox"/>
D	plaster	<input type="checkbox"/>

(Total for Question 12 = 5 marks)



13 You are working in the planning department and learning about the sequencing of construction operations.

The chart below shows activities during the construction phase of a framed building.



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

(a) Activity 1 is:

(1)

A	Erect steel frame	<input type="checkbox"/>
B	Substructure brickwork	<input type="checkbox"/>
C	Site setup	<input type="checkbox"/>
D	Landscaping	<input type="checkbox"/>
E	Formwork	<input type="checkbox"/>



(b) Activity 4 is:

(1)

A	Internal walls and partitions	<input type="checkbox"/>
B	Third fix	<input type="checkbox"/>
C	Plastering and dry lining	<input type="checkbox"/>
D	Decorations	<input type="checkbox"/>
E	Erect steel frame	<input type="checkbox"/>

(c) Activity 7 is:

(1)

A	Cladding and roofing	<input type="checkbox"/>
B	Internal walls and partitions	<input type="checkbox"/>
C	Decorations	<input type="checkbox"/>
D	Plastering and dry lining	<input type="checkbox"/>
E	Third fix	<input type="checkbox"/>

(d) Activity 9 is:

(1)

A	Decorations	<input type="checkbox"/>
B	Final fix electrical	<input type="checkbox"/>
C	Fit sanitary ware	<input type="checkbox"/>
D	Plastering and dry lining	<input type="checkbox"/>
E	Internal walls and partitions	<input type="checkbox"/>

(e) Activity 11 is:

(1)

A	Decorations	<input type="checkbox"/>
B	First fix electrical	<input type="checkbox"/>
C	Fix radiators	<input type="checkbox"/>
D	Fit sanitary ware	<input type="checkbox"/>
E	Plastering and dry lining	<input type="checkbox"/>

(Total for Question 13 = 5 marks)

TOTAL FOR PAPER = 60 MARKS



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