

SPECIMEN MARK SCHEME

UNIT 4 - CREATE THE BUILT ENVIRONMENT: HEALTH, SAFETY AND ENVIRONMENTAL INFLUENCES





Level 3 Diploma Principal Learning

Construction and the Built Environment CBE3U4

Unit 4

Create the built environment: health, safety and environmental influences

Specimen Mark Scheme

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting, they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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Set and published by the Assessment and Qualifications Alliance.

Centres should please note the following.

- The Advanced Diploma is a level 3 qualification, as are GCE 'A' levels
- The Advanced Diploma attracts 420 UCAS points, is equivalent to 3.5 GCE 'A' levels at Grade A, and is designed to provide entry to higher education
- The qualification has been designed to ensure that a minimum of half of the learning opportunities in each unit are **applied** learning opportunities.

It follows from the first two bullets that a high level of skill, knowledge and understanding are required to achieve the Advanced Diploma. The third bullet implies that at least half of any external assessment should have an applied context.

The questions in this paper have been designed to provide learners with opportunities to apply the skill, knowledge and understanding developed in the unit to realistic contexts in an applied fashion. A detailed knowledge of the contexts is not essential. The contexts and scenarios used are merely vehicles for assessing the learning that comprises the unit, by testing the learners' ability to apply what they have learned.

The intention is that tutors will use the sample external assessments to support their teaching and learning strategies.

The answers provided in the mark scheme are indicative and, as such, only examples of many possible 'correct' answers. Many other similar answers will attract marks, as long as they are correct, and address the appropriate learning outcomes and assessment criteria.

1

Safety Regulations:
CDM
COSHH
HASAWA
PPE
RIDDOR

CDM: The Construction Design & Management Regulations. It is intended to increase safety planning by encouraging all parties involved in a project to write, in advance of work done, the methods of construction and necessary associated safety procedures.

3 marks

COSHH: Control of Substances Hazardous to Health Regulations. Exposure to chemicals on a construction site can be hazardous and harmful, e.g. from adhesives, paints, cleaning agents and cement products. Operatives must only use hazardous substances after adequate safety training, using the correct procedures and wearing essential protective clothing. Methods used to store the substance must be safe.

3 marks

HASAWA: The Health and Safety at Work Act 1974 is important because it is the legislation that sets out the fundamental requirements of a safe workplace.

3 marks

PPE: Personal Protective Equipment is defined in the Regulations as equipment and clothing to be used during work activities to protect against risk to safety and health. For example, safety helmets, gloves, eye protection, high-visibility clothing, safety boots and 'working at height' harnesses.

3 marks

RIDDOR: Reporting of Injuries, Diseases and Dangerous Occurrences Regulations. This is important because it makes it a legal requirement of employers to report to the Health & Safety Executive any incidences of injury, disease or dangerous activity on a construction site.

3 marks (15 marks)

2

In a 4 x 4 risk assessment table, the perceived danger is estimated using a 1 to 4 scale for likelihood and severity of injury.

2 marks

The higher the number for likelihood and severity, the more dangerous a task is considered to be.

2 marks

Example of low risk task - lifting lightweight materials.

1 mark

Example of high risk task - excavating a deep trench.

1 mark (6 marks)

3 (a)

Safety helmet

Safety footwear

Gloves

Eye protection

High visibility vest or jacket

Hearing protection

Overalls

6 x 1 mark (6 marks)

3 (b)

Has a risk assessment been carried out?

Is the trench excavation adequately supported by sheet piling?

Is the excavation spoil being stored far enough away from the edge of the excavation to reduce the likelihood of another collapse?

Will there be a safe access and egress to and from the trench?

How long will any person be working in the trench?

Is there an evacuation procedure in place?

3 x 2 marks (6 marks)

4

A fit-for-purpose fixed scaffolding has been built.

Operative competence for plant e.g. MEWP (mobile elevated work platform) or crane, is certificated.

Harnesses and safety netting are being used.

The locations of all other operatives are known.

Risk assessments are in place.

All operatives are fully equipped with appropriate PPE.

The client is aware of all work being carried out on the roof.

There is safe access and egress to and from the roof. **3 x 2 marks** (6 marks)

5

The CDM co-ordinator is responsible for co-ordinating all of the risk reduction and control in all activities of a building project. This role, created by the CDM Regulations 1994 and reinforced in 2007, is crucial to the management of health and safety procedures. The CDM co-ordinator ensures all work carried out is completed within a set time frame.

The main contractor and associated sub-contractors must work to the requirements of the written risk assessments of their work. Failure to do so is actionable, under the CDM Regulations.

The main contractor is responsible for all employed status operatives on site and ensures that they carry out work professionally and safely.

The main contractor liaises with the CDM co-ordinator, client, architect and all sub-contractors to ensure that the project runs smoothly.

2 x 3 marks (6 marks)

6

The crane operator must have CPCS certification.

A trained slinger/signaller must work with and be in good communication with the crane operator.

The crane must not be used in high winds.

Care must be taken around overhead power lines.

Only trained operatives are to sling any load to be moved. **3 x 1 mark** (3 marks)

7

Locally-sourced and managed forest timber. **1 mark**

Sawmill used for the conversion, cutting and treatment of the timber sections has safe working practices for employees and uses organic methods of timber preservation treatment. **1 mark**

Transport distances to site are kept to a minimum. **1 mark** (3 marks)

8

Local supply of raw materials, such as clay for brick making, reduces the transport-based carbon footprint of the building industry. **2 marks**

The brick manufacturer should supply the industry with effective partnerships with building materials merchants' outlets. **2 marks**

Building site managers should buy their required brick quantities from locally-based building materials merchants. **2 marks** (6 marks)

9

Adverse effects: dust, noise, traffic flow interruption, road surface deterioration, floodlighting, water course pollution.

1 mark

Minimising adverse effects (any two):

- effective site management of working time
- setting up a safe and efficient temporary road management system
- minimising site construction time by using the most efficient methods of construction e.g. mechanical plant, off-site component manufacture / on-site assembly
- efficient use of the site space for mixing concrete and mortars
- limiting deliveries to and from site
- using noise reduction kits on tools and equipment

2 marks (3 marks)

Question Paper total – 60 marks



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1 mark

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1 mark (6 marks)

3 (a)

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Gloves

Eye protection

High visibility vest or jacket

Hearing protection

Overalls

6 x 1 mark (6 marks)

3 (b)

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2 x 3 marks (6 marks)

6

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- using noise reduction kits on tools and equipment

2 marks (3 marks)

Question Paper total – 60 marks