



6720-542 JUNE 2018

Level 3 Advanced Technical Diploma in Constructing the Built Environment (540) / Level 3 Advanced Technical Extended Diploma in Constructing the Built Environment (1080)

Level 3 Constructing the Built Environment – Theory exam

If provided, stick your candidate barcode label here.

**Thursday 21 June 2018
09:30 – 12:30**

Candidate name (first, last)

First

Last

Candidate enrolment number

Date of birth (DDMMYYYY)

Gender (M/F)

Assessment date (DDMMYYYY)

Centre number

Candidate signature and declaration*

• If any additional answer sheets are used, enter the additional number of pages in this box.

• Please ensure that you **staple** additional answer sheets to the **back** of this answer booklet, clearly labelling them with your full name, enrolment number, centre number and qualification number in BLOCK CAPITALS.

• All candidates need to use a **black/blue pen**. **Do not** use a pencil or gel pen.

• If provided with source documents, these documents **will not** be returned to City & Guilds, and will be shredded. **Do not** write on the source documents.

***I declare that I had no prior knowledge of the questions in this assessment and that I will not divulge to any person any information about the questions.**

You should have the following for this examination

- a pen with blue or black ink

General instructions

This question paper is the property of City and Guilds of London and should be returned after the examination.

- This examination contains **25** questions. Answer **all** questions.
 - Answer the questions in the space provided.
 - The marks for **each** question are shown in brackets.
- Show **all** calculations.



1 Name **two** secondary building elements commonly found in domestic properties. (2 marks)

2 Describe what is meant by the term 'security' in terms of the performance requirement of buildings. (2 marks)

3 Name **two** components of a suspended ceiling. (2 marks)

4 Name the type of foundation that is a large concrete slab which covers all of the ground under a building. (1 mark)

5 State **two** disadvantages of traditional methods of construction. (2 marks)

6 Explain how Energy Performance Certificates (EPCs) are used to support improvements to the energy performance of domestic buildings in the UK. (6 marks)

7 Explain why 'thin joint' construction techniques may be specified for masonry walls. (5 marks)

8 a) What is the term for concrete that is moulded, formed and cured in a controlled environment, transported to site and lifted into place? (1 mark)

b) What is the term for concrete that is poured into formwork on site, where it sets and hardens? (1 mark)

- 9 Define the following terms as they apply to ground improvement techniques. (1 mark)
- a) Consolidation.

- b) Compaction. (1 mark)

- 10 Describe **one** advantage of a green roof. (2 marks)

- 11 a) Identify the type of floor shown in Figure 1. (1 mark)



Figure 1

- b) Identify **one** advantage of this type of floor compared to a timber floor. (1 mark)

12 Explain why laminated timber may be specified for a portal framed beam. (4 marks)

13 Explain **one** benefit of using a deep strip foundation for an industrial building in good ground. (2 marks)

14 Explain why a monitor roof might be preferred to a traditional flat roof for a wide-span building. (6 marks)

15 Name **two** groups of people, classified in a risk assessment, who could be placed at risk because of construction works. (2 marks)

16 Identify the term used to denote 'an unplanned event or occurrence, resulting in injury or damage'. (1 mark)

17 Describe the purpose of an on-site health and safety induction. (3 marks)

18 Explain why an experienced and qualified construction worker, who has a CSCS card, still needs to obtain a 'permit to work' for particular tasks on site. (4 marks)

19 Explain why weather conditions should be taken into account when performing risk assessments for on-site tasks. (4 marks)

20 Define the term 'snagging list' as used in construction projects. (2 marks)

21 Describe **one** communication skill required by a site supervisor to efficiently perform their role. (2 marks)

22 a) Identify the document from which the extract in Figure 2 has been taken. (1 mark)

<u>Groundwork</u>						
		Qty	Unit	Rate	£	p
Groundwork						
<u>D20 Excavating and filling</u>						
Excavating						
<u>To reduce levels</u>						
A	0.25 m maximum depth	28	m3	23.00	644	00
B	1.00 m maximum depth	66	m3	5.60	369	60
<u>Trenches exceeding 300 wide</u>						
C	2.00 m maximum depth; below formation level	390	m3	5.80	2,262	00
<u>Extra over excavation irrespective of depth for breaking out</u>						
D	concrete	14	m3	9.20	128	80
E	reinforced concrete	20	m3	15.57	311	40

Figure 2

b) Name the type of paper used to display the information in Figure 2. (1 mark)

c) Describe the purpose of the document in Figure 2. (2 marks)

23 Explain how site supervisors work with buyers to procure materials. (5 marks)

24 Explain how a site supervisor can make a contribution to
a) the management of sub-contractors (3 marks)

b) the training and skills development of directly employed on-site staff. (2 marks)

25 A construction company has purchased a large plot of land that was previously used for agricultural purposes. The intention is to construct a housing estate with a range of properties from single-bed starter homes up to larger four-bed family homes, and a low-rise discount supermarket, on the site.

The local authority has indicated that it will only approve projects that serve the local community and are sustainable, environmentally friendly, use modern methods of construction, reduce or eliminate accidents during the construction process, and make satisfactory arrangements to ensure effective site supervision, supported by appropriate documentation.

a) Explain why the local authority is keen on locally-sourced materials and components.

(3 marks)

b) Summarise the documents used to help reduce risk on the site during construction.

(3 marks)
