

UNIVERSITY OF BOLTON
SCHOOL OF ENGINEERING
BENG (HONS) CIVIL ENGINEERING
SEMESTER 1 EXAMINATION 2023/2024
CONSTRUCTION MANAGEMENT/
CONSTRUCTIONMANAGEMENT AND BIM
MODULE NO: CIE6007/CIE6025

Date: Thursday 11 January 2023

Time: 2:00pm – 5:00pm

INSTRUCTIONS TO CANDIDATES:

There are SIX questions.

Answer QUESTION 1 (COMPULSORY)
and ANY OTHER THREE questions (a
total of four questions).

All questions carry equal marks.

Marks for parts of questions are shown
in brackets.

This examination carries a total of 100
marks.

All working must be shown where
necessary. A numerical solution to a
question obtained by programming an
electronic calculator will not be
accepted.

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1. Critically discuss reasons why construction companies should take health and safety seriously and how they can achieve compliance on projects.
(Compulsory Question).
25 marks

2. Provide a critical synthesis of the construction industry based on your understanding of its characteristics and how it can be categorised. Use relevant examples to support discussions.
25 marks

3. Good leadership is generally viewed as a success factor in achieving KPI targets in any business venture. What leadership/management approaches might you adopt, as a construction manager with your team, to achieve desired project success.
25 marks

4. NEC4 is hailed as a manual encouraging greater stimulus for project management with one of the new secondary clauses hinged on Building Information Modelling (BIM). Provide a critical appraisal how NEC4 stimulates the use of BIM on contemporary projects.
25 marks

5. Critically discuss the causes of insolvencies in construction firms and how Project Bank Accounts could help provide solutions.
25 marks

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6. (a) SLZ Plc is planning to embark on a retaining wall project with a value of £200,000. The project is forecast to be completed in 6 months as shown in Table 1.

Table 1. Project value forecast

VALUE FORECAST (cumulative)			
Month	Cumulative value (£)	Month	Cumulative value (£)
1	10,000	4	150,000
2	50,000	5	190,000
3	100,000	6	200,000

- (i) Generate an S-representation for the forecast. (5 marks)
- (ii) Explain using appropriate calculations, whether or not the forecast is a true representation of the 1/4-1/3 S-curve principle. (3 marks)
- (iii) During the actual execution of the project, SLZ had spent £145,000 by the third month. Provide a critical commentary on the likely causes and implications. (9 marks)

(b) SLZ Plc inserted a rate of £125 per m² for formwork to the retaining wall based on the agreement of a 13.5% for overheads, profit and risk combined. The retaining wall was assumed to be 25 bays which is 10 m long by 3 m high each making a total of 1500 m² with formwork required on both sides. Before construction work commenced, the engineer issued a variation order reducing the retaining wall to 20 bays after two sets of purpose-built shutters for the two sides of the retaining wall had been ordered. The capital cost allowed for the 10 m x 3 m purpose-built steel shutters was £30,000.

Calculate a revised rate for this varied work allowing necessary assumptions. (8 marks)

Total 25 marks

**END OF QUESTIONS
 END OF PAPER**