

UNIVERSITY OF BOLTON
**SCHOOL OF THE BUILT ENVIRONMENT &
ENGINEERING**
BSc(HONS) CIVIL ENGINEERING
SEMESTER TWO EXAMINATION 2009/2010
CONSTRUCTION MANAGEMENT
MODULE NO: BLT3007

Date: Wednesday 2 June 2010

Time: 10.00 am – 1.00 pm

INSTRUCTIONS TO CANDIDATES:

There are SIX questions.

Answer ANY FOUR questions.

All questions carry equal marks.

This examination paper carries a total of 100 marks.

Marks for parts of questions are shown in brackets.

A Normal Distribution table is provided.

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1. a. Critically comment on sub-ordinate legislation as a source of English law.

(8 marks)

b. A&C Builders Ltd were employed by the Royal Hotel to refurbish the leisure facilities in the hotel. The work included retiling the swimming pool and refitting the gymnasium and the sauna. The total value of the work was £75,000. The contract was written by the Hotel. A&C signed the contract without reading it.

The contract provided that the works must be completed by 15th March and that for every day after the completion date until the project was actually completed, A&C must pay the Hotel the sum of £5,000 in liquidated damages.

The Hotel remained open whilst the works were carried out and the Hotel estimated that the loss of profits from the closure of the leisure facilities would amount to £2,000 each week.

A&C did not complete the works until the 22nd March. The Hotel then demanded £35,000 in liquidated damages.

Immediately after A&C had completed the work, the Hotel complained that the new tiles in the pool had sea shells and not sea horses on them and claimed that the cost of replacement would amount to £20,000. In addition, they also claimed that the electrical control system in the sauna was faulty and would cost £15,000 to rectify.

The Hotel also demanded £8,000 from A&C due to loss of profits from a business conference. The Hotel had forgotten to tell A&C of this conference but, it had been booked in advance for the week beginning 15th March on the understanding that the leisure facilities would be available. As the facilities were not available, the conference was cancelled.

Assess the above situation and advise A&C of their liabilities in relation to the Royal Hotel.

(17 marks)

Total 25 marks

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2. All parts of this question relate to contracts incorporating the ICE Conditions, 7th edition.
- a. i. During the progress of the works, the Engineer has issued several variation orders. Advise the Engineer whether he is obliged to award an extension of time for completion for every ordered variation.
- ii. What action can the Engineer take to ensure completion on time in a situation where the contractor has fallen behind the accepted programme to an extent where it is clear that he will not finish within the time for completion. Assume that the contractor has no grounds for an extension of time.

In the event that the contractor did have grounds for an extension of time could the Engineer ensure completion within the original time for completion?

(10 marks)

- b. A contract includes the construction of a reinforced concrete retention tank. The drawings show a 5m long x 3m high weir for the tank to be built in engineering brickwork. The bill of quantities has been prepared on this basis.

After the weir has been constructed in brickwork, the Engineer's Representative notices that the specification states that "the weir shall be constructed in reinforced concrete".

Advise the Engineer's Representative of the action he should now take and the procedures he should follow.

(15 marks)

Total 25 marks

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3. a. In terms of organisational theory, describe the main features of the systems approach and suggest how recognition of this approach can assist management.

(12 marks)

- b. You have recently been appointed Manager over both the Design and the Detailed Drawing Offices. Both Office managers report directly to you.

You have already received complaints from each manager, not only about the other but also to express dissatisfaction about the performance of the other Office. In addition, staff to whom you have spoken hold a low opinion of their counterparts in the other Office.

Recent productivity returns are showing a worrying fall and absenteeism is on the increase.

Give an assessment of the above situation and describe the actions you might take to improve matters.

(13 marks)

Total 25 marks

4. a. Briefly discuss the relevance of Continuing Professional Development to the Construction Professional.

(5 marks)

- b. Discuss the concept of the psychological contract in the context of motivation in the workplace.

(20 marks)

Total 25 marks

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5. a. Compare and contrast public and private limited companies from a company finance and administration perspective. (10 marks)

b. Table Q5 shows the value of work a contractor expects for a newly awarded contract. He assumes the cost of the work will be 90% of value and that he will complete the work within 4 months. The conditions of contract allow interim measurements to be made monthly with the amount certified less 10% retention to be paid to the contractor one month later. Half of the retention will be certified for payment on completion, the other half to be certified 6 months after completion.

Month	1	2	3	4
Value of work each month (£'000)	40	75	94	25

Table Q5

The contractor anticipates that his costs will be made up of 20% labour, 25% plant, 35% materials and 20% sub-contract. He also expects that his materials suppliers will allow 2 months credit that sub-contractors will be paid 1 month after carrying out their work and that plant and labour costs will be met at the end of the month in which they arise.

Determine the monthly net cash flows for the project and, assuming an annual interest rate of 5%, calculate the interest charges on locked up capital up to the end of month 4.

(15 marks)

Total 25 marks

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- 6.a. Table Q6a shows the activities involved in the construction of a warehouse together with the optimistic, most likely and pessimistic time estimates, in weeks, for each activity.

Activity	Optimistic	Most likely	Pessimistic
1-2	5	6	9
2-3	4	6	8
2-4	8	10	12
3-5	2	3	4
4-5	4	6	10
4-6	3	5	7
5-6	6	7	9

Table Q6a

Determine the time for completion of the project if it is to be that period within which there is a 75% probability of completing the works.

(10 marks)

- b. Explain how the ConCA research project model presents an holistic view of the causality of construction accidents.

(15 marks)

Total 25 marks

END OF QUESTIONS

NORMAL DISTRIBUTION TABLE

