

National Exams May 2009

07-Str-B2, Management of Construction

3 hours duration

Notes

- 1 If doubt exists as to the interpretation of any question, the candidate is urged to submit with the answer paper, a clear statement of any assumptions made,
- 2 This is a "Closed Book" exam. Candidates may use one of two calculators, the Casio or the Sharp approved models,
- 3 Any five questions constitute a complete paper. Only the first five questions as they appear in your answer book will be marked
- 4 All questions are of equal value

3 Engineering Economics

Annual maintenance costs for a particular section of highway pavement are \$3,000. The placement of a new surface would reduce the annual maintenance cost to \$750 per year for the first 5 years and to \$1,000 per year for the next five years. The annual maintenance after 10 years would again be \$3,000. If maintenance costs are the only saving, calculate the maximum investment that can be justified for the new surface, with interest at 4%.

4 Litigation

Discuss the main reasons for delay-related claims on construction projects and the contractual modifications that can reduce such claims. Also, discuss the various approaches by which a claim can be settled and the types of analyses that need to be performed to validate and judge such claims.

5 Project Control

- (a) Briefly discuss the project's S-Curve and explain its shape.
- (b) Briefly discuss how the Earned Value approach is used to control the time and cost of projects.

6 Safety Practices and Regulations

Construction sites can be considered as being one of the most hazardous types of working environments. Discuss some of the important practices that need to be adopted on highway rehabilitation work zones, particularly during night construction, to assure an accident-free environment.

Marking Scheme

- 1 20 marks
- 2 20 marks
- 3 20 marks
- 4 20 marks
- 5 20 marks
- 6 20 marks