

## B.Tech. Degree VIII Semester (Supplementary) Examination in Civil Engineering, May 2003

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### CE 801 CONSTRUCTION MANAGEMENT II (1998 Admissions)

Time: 3 Hours

Maximum Marks: 100

(Draw neat sketches wherever applicable)

- I. (a) What are the major engineering considerations in selecting earth moving plant/machinery? Explain. (10)  
(b) Write brief essay on balancing equipments. (10)
- OR**
- II. An irrigation canal 10m at bottom, 5m deep with 45° side slopes is to be constructed by cut and fill. The length of the canal is 5Km and is to be completed in 5 months time. The bed slope of the canal is 1 in 1000 and the natural slope of the ground as per longitudinal section is 1 in 2000. Service tracks of 3.6m width with water bound macadam with earthen berms of 1.2m wide on both sides to be constructed on both sides of the canal. The type of soil is generally gravelly type with soft laterite at patches but not exceeding 20% of total cutting. As construction engineer in charge of the work you are required to work out the optimum plant and machinery requirement for the work. State reasons for your assessments. (20)
- III. Describe the main factors you would consider in plant lay out. (20)
- OR**
- IV. (a) Describe the main factors to be considered in selection of equipments. (10)  
(b) A construction company is thinking of replacing the existing concrete mixer A with new mixer B. The present cost of mixer A is Rs.10,000/- and of B is Rs.20,000/-. Both mixers have life of 5 years. The running expenditure on mixer B is Rs.1,000/- per year. The running cost on mixer 'A' is Rs.4,000/- for the first year and additional Rs.400/- per year for next four years. No salvage value is expected from mixer 'A' salvage value of Rs.2,000/- is expected from mixer B. As an advisor to the company find (i) present value of the mixers A and B at 12% interest rate. (ii) Suggest whether the old mixer be replaces or not. (10)
- V. (a) Describe the various types of form work and state the practical assumptions regarding pressure of concrete for form work calculations. (10)  
(b) A floor of RCC 15cm thick is to be cast in panels of 4 x 5 m. It is proposed to provide M.S sheets and structural steel form work. Design the form work assuming the width of MS sheet is 0.80m. Find the thickness of plywood form work if it replaced M.S. sheets. (10)
- OR**
- VI. (a) Describe the various types of loads to be considered for design of form work. (10)  
(b) Give the step by step method procedure for the design of timber form work for RCC column 0.4 x 0.5m size with an unsupported length of 5.0m. (10)
- VII. (a) Explain the significances of inventory control in construction management. Derive expressions for EOQ. (10)  
(b) A company requires 1000 units of an item per month. The order cost is Rs.50/- per order. In addition to Re.1/- the carrying cost are 10% per unit of average inventory per year. The purchase price is Rs.10/- per unit. Find the economic lot size to be ordered and the minimum cost. (10)
- OR**
- VIII. (a) Explain the significance of selective inventory control considering various techniques of selective inventory control. (10)  
(b) Enumerate the step by step method of preparation of ABC analysis graph. State the merits and demerits of ABC analysis. (10)
- Write a brief essay on computer programmes in construction management. (20)

**OR**

Write brief notes on the following:

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|---------------------------|-----------------|
| (i) Coding considerations | (ii) Data files |
| (ii) File design          | (iv) DBMS       |

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