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# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## September / October 2023 Supplementary Examinations

**Programme: B.E.**

**Semester: VIII**

**Branch: Civil Engineering**

**Duration: 3 hrs.**

**Course Code: 21CV8HSCEP**

**Max Marks: 100**

**Course: Construction Project Mgmt, Economics & Professional Ethics**

**Date: 13.09.2023**

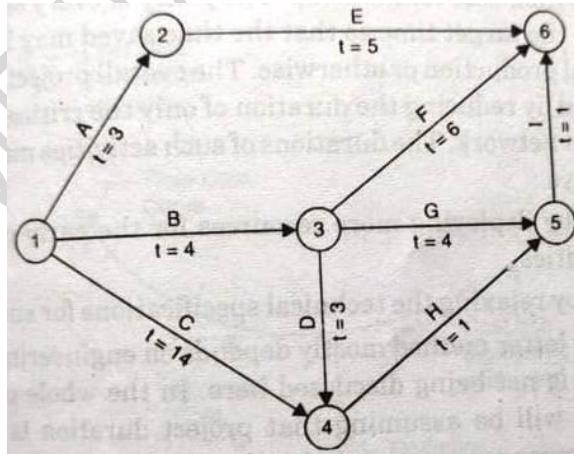
**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
2. Missing data, if any, may be suitably assumed.

### UNIT - I

1 a) Discuss any two graphical methods by which the progress in a construction project can be monitored. **10**  
 b) Discuss the elements of a network diagram with a neat illustration. Also state any five network rules. **10**

### UNIT - II

2 a) The network shown below has the estimated duration for each activity marked. Determine the total float for each activity and establish the critical path. **15**

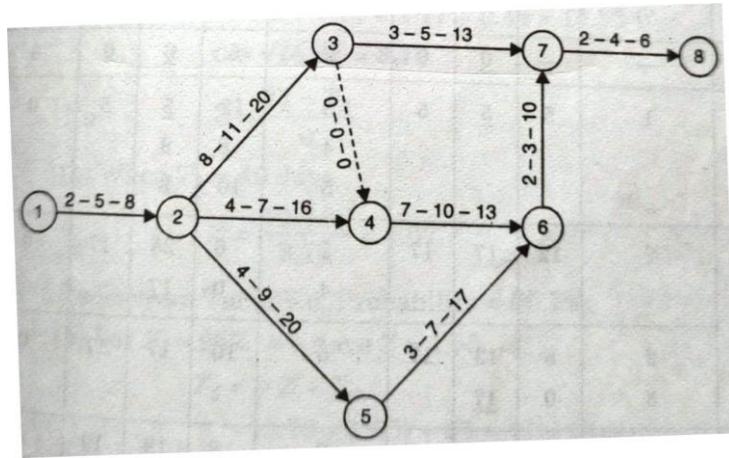


b) Define 'optimistic time estimate' and 'pessimistic time estimate'. **05**

### OR

3 a) The network for a construction project with the three time estimates of each activity marked is given below. Determine: **15**  
 a) Critical path and its standard deviation  
 b) Probability of completion of project in 40 days  
 c) Time duration that will provide 95% probability of its completion in time.

**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.



b) Differentiate clearly 'earliest start time' and 'latest start time'. 05

### UNIT - III

4 a) Elaborate on the factors to be considered for deployment of manpower and machinery in a construction project 10

b) Explain the importance of time-cost trade-off analysis in a project and the different techniques used. 10

### UNIT - IV

5 a) Arun secures a loan of Rs. 3,00,000 at an interest of 10% compounded annually and starts an industry. As it is a start-up, the bank provides a free period of 3 years. Calculate the uniform end of payment to liquidate the debt for a period of 9 years. Compute the total payment he makes to the bank. 10

b) Discuss the techniques and process of Capital budgeting. 10

### OR

6 a) Karan borrows Rs. 2,00,000 from a bank to start a hotel. For the first three years he does not repay the loan. At the end of third year, he obtains a further loan of Rs. 1,00,000. After six years, he starts repayment of both loans and clears them in further period of 10 years. Calculate the yearly instalment that he has to pay uniformly at 8% interest rate. 10

b) Explain the significance of financial ratios and discuss any four ratios. 10

### UNIT - V

7 a) List and discuss any five ethical principles that needs to be followed by a professional. 10

b) With two examples, demonstrate the cases of breach of professional responsibility in construction industry. 10

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