

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION, 2016

M.TECH II SEMESTER

COURSE CODE: 10M11CE213

MAX. MARKS: 15

COURSE NAME: CONSTRUCTION COST ANALYSIS

COURSE CREDITS: 03

MAX. TIME: 1 HR

Note: All questions are compulsory. Draw figure, sketches and give suitable example to illustrate your answers. Assume missing data suitably if required. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. Calculate the quantities of materials required for the following item of work - 2
12 mm thick cement plastering in 1:3 cement mortar for 400 m²
2. Write short notes on - 2 x 2 = 4
 - i. Operational estimating
 - ii. Payback period
3. Prepare the analysis of rates for half brick (10 cm thick) wall in 1:4 cement mortar with the following information - 4
Labor required for 100 m² - Mason 13 man-days @ Rs. 350 per day
 - Mazdoor 20 man-days @ Rs. 250 per day
 - Bhisti 3 man-days @ 250 per day

Material rates (including carriage and handling charges) -

Bricks - Rs. 5,000 per thousand nos.

Sand - Rs. 1,100 per m³

Cement - Rs. 300 per bag

4. The volume of concrete required for the construction of an Intake structure (height 24 m) is 1,000 m³. Total concreting can be completed in 12 pours with 2 m height of each pour. An economic choice has to be made between steel formwork and wooden formwork. The nos. of repetition of wooden formwork is estimated to be 4 nos. while that for the steel formwork is 6 nos. The cost of one set of wooden formwork and one set of steel formwork are Rs. 25,000 and Rs. 75,000 respectively. One set of formwork is required for each pour and shuttering area for each pour is 200 m². It is estimated that the labor costs for fixing and removing the wooden formwork and the steel formwork are Rs. 20 and Rs. 30 per m² of shuttering respectively. Which formwork will be economical for the concreting of the intake structure? Justify your answer. 5