

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
T3- EXAMINATION (December - 2018)
B. Tech. (V- SEM.)

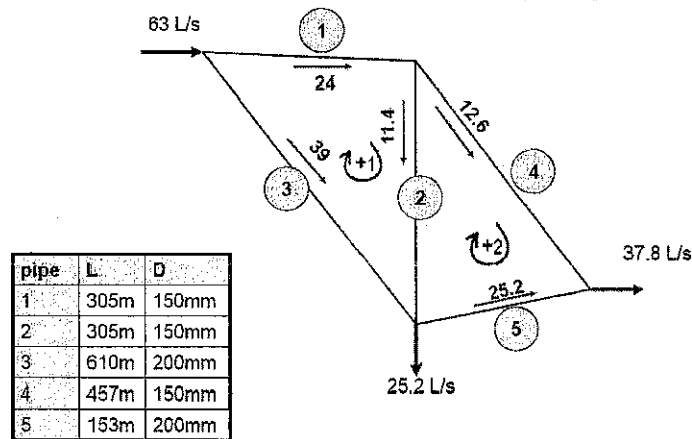
COURSE CODE: 10B11CE514
 COURSE NAME: Water Supply Engineering
 COURSE CREDIT: 4

MAX. MARKS: 35
 MAX. TIME: 2 HRS

Note: Attempt all questions. Assume suitable data if required. Carrying of mobile phone during examinations will be treated as case of unfair means

December 2018

1. Design a RSF unit along with an *under drainage* system represented by a neat sketch to treat a flow of 25 MLD. Assume suitable design parameters. (7)
- 2 a) Discuss the advantages and disadvantages of Dead End System for water distribution network. (4)
- 2 b) Solve the following pipe network using Hardy-Cross method. Compute the corrected flows after *two* iterations. (7)



- 3 a) In the context of filtration process, discuss (a) the importance of backwashing and (b) operational problems associated with the filtration process (5)
- 3 b) Design five SSF beds for water supply to a town having population of 1, 20,000. The per capita rate of filtration is 150 lpcd and rate of filtration is 250 l/hr/m² (3)
- 4 a) A town has a population of 80,000 with a demand rate of 150 lpcd. The disinfection process has been carried out using bleaching powder having 40% available chlorine. The chlorine dose was determined to be 0.6 ppm. Determine the annual requirement of bleaching powder (3)
- 4 b) With a neat sketch, explain the principle of break-point chlorination. (3)
- 4 c) In a neat tabular format, show and explain how increasing pH value reduces the effectiveness of free chlorine (from HOCl) (3)