JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION-2022

B.Tech-VII Semester (Civil)

COURSE CODE (CREDITS): 18B1WCE736(3)   MAX. MARKS: 35

COURSE NAME: DAM AND RESERVOIR DESIGN

COURSE INSTRUCTORS: NIRAJ SINGH PARIHAR   MAX. TIME: 2 Hours

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

1. Discuss the ill effects of dam and reservoir on the socio-economic, cultural and ecological background of the region.[5]   (CO1)

2. Derive the expression for principal and shear stresses acting on the gravity dam. [5] (CO4)

3. Briefly explain the modes of structural failure in an earthen dam. [5]   (CO5)

4. A homogenous earthen dam has a total height of embankment as 14m and water depth as 12 m. The u/s and d/s slopes are 2.5:1 and 2:1 respectively and the top width is 2 m. It is provided with a d/s filter of 28 m length. The coefficient of permeability is 8×10^{-5} m/sec. Determine the phreatic line and the discharge through the dam.[10]   (CO5)

5. Give a short write-up on any two of the following:

    a. Challenges faced during the construction of three-gorges dam

    b. Design considerations of d/s filter in an earthen dam

    c. Foundation grouting   [5x2]   (CO2,CO3,CO5)