

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2023

PhD -Ist Semester (CE/HSS)

COURSE CODE (CREDITS): 12M1WCE332

MAX. MARKS: 25

COURSE NAME: Repair and Retrofitting of Structures

COURSE INSTRUCTORS: Mr. Chandra Pal Gautam

MAX. TIME: 1 Hour 30 Minutes

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

- Q.1. (i)** Discuss various needs and benefits of repair and retrofitting of structures.
(ii) Differentiate between restoration, maintenance, retrofitting and rehabilitation. [3+3 = 6]
- Q.2. (i)** Mention different reasons for deterioration of a structure during its design life.
(ii) Mention the reason for deterioration of structures due to foundation and how that can be avoided in hilly region. [2+2 = 4]
- Q.3.** Discuss the types, mechanism and effect of corrosion in steel and how that can be avoided. [4]
- Q.4.** Discuss the reason and mechanism behind acid and sulphur attack on concrete. Also mention the preventive measures. [4]
- Q.5.** "Freezing and thawing is a major challenge for concrete in cold weather". Justify this statement and mention the preventive measures for the same. [4]
- Q.6.** Discuss the effect of different kind of loading on the structures and how they enhance the deterioration of the structure. [3]