

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- Oct 2017

B.Tech VII Semester

COURSE CODE: 10B13CE744

MAX. MARKS:25

COURSE NAME: Advanced Concrete Technology

COURSE CREDITS: 3

MAX. TIME: One Hour Thirty Minutes

---

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. All questions carry equal marks.*

---

1. Under what conditions may salt solutions damage concrete without involving chemical attack on Portland cement paste? Which salts commonly occur in natural environments?
2. What is the effect of pure water on hydrated Portland cement paste? With respect to carbonic acid attack on concrete, what is the significance of balancing of  $\text{CO}_2$ ?
3. With coastal and offshore concrete structures directly exposed to sea water, why does most of the deterioration occur in tidal zone? From surface to the interior surface of concrete, what is the typical pattern of chemical attack in sea structures?
4. What is the principle advantage of using fibre reinforced concrete? Explain how the concrete acquires this property.
5. Write a short note on the selection of materials and proportioning of mixtures suitable for use in fibre reinforced concrete, with special attention to how the requirements of toughness and workability are harmonized.