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First Semester  
Supplementary Examination

Roll No .....  
B.tech. (Evening)  
Feb-2019

**CCE-101 : CIVIL ENGINEERING BASICS AND APPLICATIONS**

**Maximum Marks 40**

**Time 3 hours**

Note: Attempt all questions.

1. Attempt any five parts

- a. Explain the method of estimating of loads on building with suitable example.
- b. Describe the important effects of  $C_3A$  on the properties of concrete. Also compare the contribution of  $C_3S$  and  $C_2S$  to the 28 day strength of concrete.
- c. What are the advantages of placing concrete by pumping?
- d. What are the factors affecting the workability of concrete? How it is measured? What is meant by segregation of concrete mix?
- e. Describe a common method of protecting building structures against termites by physical and chemical barriers.
- f. Explain and differentiate among igneous, sedimentary and metamorphic rocks.  
(2.5x5=12.5)

2. Attempt any three parts

- a. Explain the various structural features of rock with the help of suitable sketches.
- b. Describe briefly the basic features of VSBK and bull's Trench kiln. Also explain their relative merits and demerits
- c. Illustrate with data/ example the purpose served with basic building byelaws.
- d. Explain the different types of weathering of rocks. Also explain why basalt weathers faster than granite. What do you mean by carbonation?  
(3.5x3=10.5)

3. Attempt any two parts

- a. What are initial and final setting times of cement? How does the knowledge of these help an engineer in construction work? State the IS requirements, if any, for general purpose OPC.
- b. What is the test for alkali aggregate reaction? For what type of construction this test is important.
- c. How does change in moisture content affect the properties of timber? How moisture content in Timber is determined? Whether there is any BIS requirement for allowable moisture content in timber, state the same, if any.  
(4x2=8)

4. Attempt any three parts

- a. What is water cement ratio and how does it influence the strength of concrete.
- b. What are the air entraining admixtures and how do they affect water cement ratio segregation, bleeding and permeability of concrete.
- c. Illustrate dip and strike with appropriate sketches.
- d. Describe briefly the desirable qualities of building stone.  
(3x3=9)

