Registration No : | | | | | | | | | | |

Total Number of Pages : 01 **M.Tech.**

CEPE102

1st Semester Back Examination 2017-18
ADVANCED CONSTRUCTION MATERIALS
BRANCH : STRUCTURAL ENGG
Time : 3 Hours
Max Marks : 70
Q.CODE : B1054

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2x10)**

a) Distinguish between *cement mortar* and *cement concrete*.
b) State the composition of Portland cement.
c) What is the function of an *admixture*?
d) State the factors which influence the shrinkage strain in plain concrete.
e) Which IS Code is used for preparation of concrete mix design?
f) Define high strength concrete and state an example.
g) What do you mean by ferro- cement?
h) Define three different grades of *ordinary Portland cement*.
i) State four different types of fibres used in fibre reinforced concrete.
j) What do you mean by a sandwich panel? State an example.

Q2 Explain creep and shrinkage characteristics of concrete. Distinguish among low, medium and high strength concrete. **(5+5)**

Q3 **a)** *Explain the term; rheology* of concrete. What are the various parameters which control the rheological properties. **(5)**

b) Describe the influence of industrial waste materials on physical and mechanical properties and durability of concrete. **(5)**

Q4 What do you mean by ferrocement? Explain the mechanism, construction features and types of ferrocement used in different construction practices. **(2+8)**

Q5 Describe the causes and preventive measures for corrosion of concrete and corrosion of steel reinforcement. **(10)**

Q6 Define polymer concrete. State and explain the different methods of polymerization process. **(10)**

Q7 Describe the physical and mechanical characteristics of fibre reinforced concrete. **(10)**

Q8 **Write short notes on any TWO :** **(5x2)**

a) Rheology of fresh concrete.
b) Nominal mix and design mix
c) Corrosion of concrete
d) Architectural use of composites