

**Government College of Engineering, Aurangabad**  
(An autonomous Institute of Government of Maharashtra)

**M.E. (Structural Engineering) (FT/PT) Revised**

End Semester Examination Nov/Dec 2016

AM 544: ~~Advanced Concrete Technology~~

Time: Three Hours

Max. Marks: 60

"Verify the course code and check whether you have got the correct question paper"

**N.B:**

1. a) Q.1 is compulsory.  
b) Solve any Two questions from Q.2, Q.3 and Q.4, and  
c) Solve any Two questions from Q.5, Q.6 and Q.7
2. Assume suitable data if necessary and state it clearly
3. Use of non-programmable calculator is allowed

- Q.1 Explain **Any Three** of the following, 12
- i) Rheology of concrete
  - ii) Exposure conditions as per IS 456
  - iii) Role of viscosity modifying agent in SCC
  - iv) Ferrocement and its applications
  - v) Types of concrete damages
- Q.2 a) What are the factors influencing modulus of elasticity of concrete. Describe the methods of its measurement. 06
- b) Explain the acceptance criteria for the strength of concrete as per IS 456-2000 06
- Q.3 a) What are the essential requirements of materials used in High Performance Concrete? 06
- b) Write a note on cement- superplasticiser compatibility. 06
- Q.4 a) Enlist various types of aggregates used in light weight concrete and discuss their effect on its performance. 06
- b) What is aerated concrete and how it is produced? 06
- Q. 5 Present a comparative study of mix proportioning of concrete as per IS 10262-1982 and IS 10262-2009. 12
- Q.6 Explain the role of fibres in fibre reinforced concrete (FRC). How volume fraction, aspect ratio and orientation of fibres influence the properties of FRC? 12
- Q.7 a) Discuss non destructive evaluation of quality of concrete. 06
- b) Explain various strategies of strengthening beam. 06