

SUBJECT CODE NO:- P-139
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E.(Civil) Examination May/June 2017
Concrete Technology
(Revised)

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B i) Q No.1 and 6 are compulsory. Attempt any two questions from each section from remaining.
 ii) Draw neat sketch wherever necessary.
 iii) Figure to the right indicates full marks.

Section A

- Q.1 Answer the following question (Any five):- 10
 (a) What is hydration? Mention factors that govern rate of hydration.
 (b) What is workability of concrete?
 (c) Enlist factors affecting creep.
 (d) What is curing? Enlist methods of curing.
 (e) What are the factors affecting the strength of concrete?
 (f) Enlist basic members used in framework.
 (g) Explain shrinkage and enlist types of shrinkages.
 (h) What are different types of segregation in concrete?
 (i) What are admixtures? Explain retarder.
- Q.2 (a) Explain wet process of manufacturing of cement. 08
 (b) Why curing is necessary? Explain different types of curing. 07
- Q.3 (a) Explain the term normal consistency, initial setting time, final setting time and explain in short how they are found. 08
 (b) What is the classification of aggregate and explain characteristics of aggregates influencing strength of concrete. 07
- Q.4 (a) Explain what is bulking of sand & mention its significance. 05
 (b) What are properties of fresh concrete explain in detail. 05
 (c) What are different types of cement explain any one in detail. 05
- Q.5 Write short notes on (Any three):- 15
 (a) What is compaction? Why it is required and what are various ways of compaction.
 (b) What is Vicat apparatus and for what it is use? Explain with neat sketch.
 (c) What is percentage of various ingredients of level
 (d) What are different types of test conducted on fresh and hardened concrete?
 (e) What is initial and final setting time of concrete?

Section B

- Q.6 Answer the following questions (Any five):- 10
 (a) State the assumption in design of plastic concrete of medium strength.
 (b) What is a self-compacting concrete.
 (c) Enlist different methods of mix design.
 (d) Enlist different types of mixes.
 (e) What is high density concrete?
 (f) What is pumping of concrete? How it is done?
 (g) What is NDT? Enumerate different tests
 (h) Define permeability and durability.
 (i) What is shrinkage of concrete?
- Q.7 (a) Explain concept of mix design? 07

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- (b) Name different methods of mix design of concrete. Explain I.S. method of Mix design. 08
- Q.8 Design concrete mix for M₂₀ grade concrete with following data: 15
- (i) Characteristic comp. strength at 28 days=20 Mpa.
 - (ii) Min size of aggregate 20 mm.
 - (iii) Degree of workability-C.F.=0.8
 - (iv) Degree of quality control-Good
 - (v) Sp. Gravity of cement-3.15
 - (vi) Sp. Gravity of C.A.-2.6
 - (vii) Sp. Gravity of F.A.=2.6
- Assume suitable data if required.
- Q.9 (a) Explain sulphate attack and chloride attack. 07
- (b) What is creep of concrete? Explain factors affecting creep. 08
- Q.10 Explain short notes on:- 15
- (a) Polymer concrete
 - (b) Mechanism of corrosion of reinforcement.
 - (c) Under water concreting
 - (d) Fiber reinforced concrete
 - (e) Types of repair