

**C.U.SHAH UNIVERSITY****Winter Examination-2015****Subject Name : Concrete Technology****Subject Code :4TE03CNT1****Branch :B.Tech (Civil)****Semester :3****Date :12/12/2015****Time : 2:30 To 5:30****Marks :70****Instructions:**

- (1) Use of Programmable calculator and any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

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Q-1	(a) What is carbonation?	1
	(b) What is hydration of cement?	1
	(c) Define vacuum concrete.	1
	(d) What is modulus of elasticity of concrete?	1
	(e) What is compaction factor of concrete?	1
	(f) Define creep	1
	(g) Enlist various methods of measurement of workability.	1
	(h) What are the sizes of standard cubes and cylinders used for compression test for concrete?	1
	(i) Define polymer concrete.	1
	(j) Write the equation suggested by IS: 456-2000 for calculating modulus of elasticity of concrete.	1
	(k) Define segregation.	1
	(l) Define bleeding.	1
	(m) Define plastic shrinkage.	1
	(n) Define drying shrinkage.	1

**Attempt any four from Q-2 to Q-8.**

Q-2	(a) Enlist and explain function of each Bogue's compound.	5
	(b) Write short note on "Gap grading".	5
	(c) Differentiate between setting and hardening of cement.	4
Q-3	(a) What are effects of weathering-freezing and thawing on concrete?	5
	(b) Discuss effects of age of concrete on its strength.	5
	(c) Differentiate between coarse aggregate (CA) and fine aggregate (FA)	4
Q-4	(a) Write short note on 'sea water attack' on concrete.	5
	(b) Define concrete mix design. Give its objectives. List methods of concrete mix design.	5
	(c) Differentiate between volume batching and weigh batching in concrete mix procedure.	4



- Q-5 (a) What is shrinkage in concrete? Explain factors affecting shrinkage of concrete. 5  
(b) Write short note on fibre reinforced concrete (FRC). 5  
(c) What are the applications of polymer impregnated concrete (PIC)? Discuss. 4
- Q-6 (a) Give mix design steps for ACI method. 5  
(b) Write short note on self compacted concrete (SCC). 5  
(c) Distinguish between nominal mix and design mix. 4
- Q-7 (a) What is cement? What are its ingredients? State the function of each ingredient. 7  
(b) Define workability. Discuss factors affecting workability. 7
- Q-8 (a) What is admixture? Enlist various admixtures with their use. 7  
(b) State factors affecting compressive strength of concrete and explain w/c ratio. 7

