

B. E. CONSTRUCTION ENGINEERING 4TH YEAR 2ND SEMESTER - 2017**SUBJECT Advance Concrete Technology**

Time : Three Hours

Full Marks : 100

No of Questions	Question	Marks
	Answer any five questions.	
Q1	Write a short note on cold weather concrete.	20
Q2a	State whether the following statements are 'TRUE' or 'FALSE'. (i) Lower the water cement ratio, higher is the possibility of shrinkage. (ii) Incorporation of silica fume in concrete decreases the workability. (iii) High aspect ratio of steel fibres increases the potential for balling effect (iv) If the water cement ratio of concrete is more, permeability of concrete will be more (v) CaO content is maximum in silica fume amongst flyash, silica fume and GCBS	05
Q2b.	Briefly discuss the reasons for nonlinearity of the stress-strain relationship of concrete.	15
Q3.	Discuss the salient features of Fly Ash based concrete composites.	20
Q4a.	Write short note on Filling Ability of self compacting concrete.	10
Q4b.	Compare self compacting concrete with conventional concrete.	10
Q5a.	Briefly discuss the following (i) Secant modulus (ii) Chord modulus (iii) Pore and grain refinement in concrete microstructure (iv) Secondary Hydration of concrete	02 02 03 03

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Q5b.	Write a short note on transition zone in concrete microstructure.	10
Q6a	<p>The final mix proportions (quantities) per m³ of concrete before moisture correction from a mix design are as follows.</p> <p>Cement : 200 kg Fly Ash : 200 kg Water : 160 kg Coarse Aggregate : 1223 kg</p> <p>Specific gravity of cement, Fly Ash, Coarse and Fine Aggregate are 3.15, 2.30, 2.90 and 2.66 respectively. Calculate the quantity of fine aggregate per m³ of concrete.</p> <p>Specific gravity of Napthalene based super plasticizes is 1.20.</p> <p>Super plasticizer doze is 0.8% by weight of cement</p> <p>Moisture absorption of coarse Aggregate : 1.5% Moisture absorption of fine Aggregate : 2.0%</p> <p>On a particular day, the moisture content of coarse aggregate is 1% and fine aggregate is 3%. Find out the quantities of different ingredients per m³ of concrete after moisture correction.</p>	15
Q6b.	Name the different tests generally carried out to asses the properties of self compacting concrete.	05