Ref. No. ...*EX/CE/5/I/405A/2018*

.....*B. E. Civil Engineering (Part Time) 4th Year*... EXAMINATION, *2018*
(1st / 2nd Semester / ~~Repeat / Supplementary / Annual / Bi-Annual~~)

SUBJECT .....*Concrete Technology*
(Name in full)

PAPER .....*XX*.....

Full Marks 100
(50 marks for part I)

Time: ~~Two hours~~/Three hours/~~Four hours/Six hours~~

Use a separate Answer-Script for each part

No. of Questions	PART I	Marks
	Different tables and charts are allowed in the examination hall	
1.	**Answer all questions**	
	Design a concrete mix as per DoE method with the following requirement	20
	i) Characteristic strength =30MPa	
	ii) Degree of Workability=Medium	
	iii) Type of exposure=Moderate	
	iv) Degree of quality control=Fair	
	v) Max^{m} permissible water cementitious material ratio=0.50	
	Material Data	
	a) Cement : OPC, Specific gravity of cement: 3.15	
	b) Specific gravity of coarse aggregate: 2.72, Nominal max^{m} size of coarse aggregate: 20 mm.	
	c) Specific gravity of fine aggregate: 2.68, % passing of fine aggregate through 600 micron sieve: 52%	
	d) Amount of fly ash: 20% of total cementitious material.	
	e) Specific gravity of fly ash: 2.90	
2.	a) Describe the effect of C_2S and C_3S on properties of concrete?	5
	b) What is the difference between initial set and flash set of cement?	5
	c) What is standard consistency of cement? Why it is important?	5
	d) How heat of hydration is related to the hydration of different compounds of the cement?	5
	e) For full hydration of cement, the minimum water cement ratio is 0.38. Explain.	5
	f) Describe Bogue compounds and Bogue equations in connection with cement compounds.	5

Ex /CE/5/T/405A/2018

B.E. CIVIL ENGG.(PART TIME) 4th YEAR 2nd SEM. EXAM. 2018

Subject: CONCRETE TECHNOLOGY. **TIME: 3 Hours** **Full Marks: 100**

(50 marks for each part)

Use a separate Answer-Script for each part
Necessary different tables and graphs are allowed in the Exam. Hall

No. of questions	Part II (Answer question No. 1 and any 3 from the rest)	Marks (4X5+3X10=50)
1. (a) (b) (c) (d) (e)	Write Short note (any four) Carbonation of concrete. Fiber reinforced concrete. Elasticity of concrete. Corrosion of reinforced cement concrete Fly ash concrete	5 X4 =20
2.	What are the properties of self-compacting concrete? Describe J ring test for measuring the workability of self-compacting concrete.	3+7=10
3.	What do you mean by shrinkage of concrete? Describe different type of shrinkage occurred in concrete.	2+8 =10
4.	What do you mean by workability of concrete? Describe the factors affecting the workability of concrete.	2+8=10
5.	What do you mean by flexural strength of concrete? Describe the procedure of measuring the flexural strength of concrete.	2+8=10