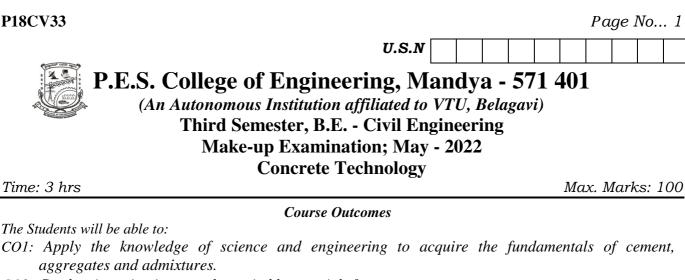
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CO2: Conduct investigations to select suitable materials for concrete.

CO3: Design special concrete as per selected codes.

CO4: Apply the concept of durability of concrete for sustainability.

Note: I) PART - A is compulsory. Two marks for each question.

II) PART - B: Answer any <u>Two</u> sub questions (from a, b, c) for a Maximum of 18 marks from each unit.

Q. No.	Questions	Marks	BLs	COs	POs
Ia.	I : PART - A Define hydration of cement.	10 2	L1	CO1	PO1
	•				
b.	What are the factors affecting workability of concrete?	2	L1	CO2	
с.	Define modulus of rupture.	2	L1	CO4	PO7
d.	What is sulphate attack in concrete?	2	L1	CO4	PO7
e.	What are the components of light weight concrete?	2	L1	CO3	PO3
	II : PART - B	90			
	UNIT - I	18			
1 a.	Name the Bogue's compounds. Explain their role in strength	9	L1,L2	CO1	PO1
	development.	,			
b.	What are different laboratory tests conducted on cement in the	9	L1,L2	CO1	PO1
	laboratory? Explain any one of them in detail.				
c.	Explain the following:				
	i) Setting time of cement	9	L2	CO1	PO1
	ii) Aggregate crushing value		LZ	COI	PUI
	iii) Flakiness and Elongation index				
	UNIT - II	18			
2 a.	Explain plasticizers, accelerator and retarders.	9	L2	CO1	PO1
b.	What is workability of concrete? List the factors affecting on	9	L1,L2	CO2	PO4
	workability and explain any one.				
c.	Write a note on the following:				
	i) Batching	9	L2	CO2	PO4
	ii) Mixing of concrete				
	iii) Transporting of concrete				
	, <u> </u>				

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	UNIT - III	18		
3 a.	Explain the following:			
	i) Maturity of concrete	9	L2	CO3 PO7
	ii) Creep of concrete	9	L2	
	iii) Modulus of rupture			
b.	Explain the different types of shrinkage in concrete.	9	L2	CO4 PO7
c.	Explain the rebound hammer test and ultrasonic pulse	0	12	
	velocity test.	9	L3	CO PO7
	UNIT - IV	18		
4 a.	Write short note on RMC.	9	L2	CO3 PO3
b.	Write short note on;			
	i) Self compacting concrete	9	L2	CO3 PO3
	ii) High volume fly ash concrete			
c.	Discuss the effect of;			
	i) Acid attack	9	L2	CO4 DO2
	ii) Efflorescence	9	LZ	CO4 PO3
	iii) Sulphate attack			
	UNIT - V	18		
5 a.	Write short note on;			
	i) High performance concrete	9	L2	CO3 PO7
	ii) Roller compacted concrete	J	L2	05 107
	iii) Light weight concrete			
b.	List and explain the factors affecting properties of fiber	9	L2	CO3 PO7
	reinforced concrete.	J		
c.	Write a note on Geo-Polymer concrete.	9	L2	CO3 PO7

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