SHRI RAMSWAROOP MEMORIAL UNIVERSITY

End Semester Examination (2021-22)-Odd Semester

M. Tech. (Structural Engineering) CE– I /II Year (I / III Sem)

Course Name: Advanced Concrete Technology and Design	**Code: MCE1013/3005P**
Time: 02 Hours	**Max Marks: 60**

University Roll No.															

(To be filled by the Student)

Note: Please read instructions carefully:

a) *The question paper has 03 sections and it is compulsory to attempt all sections.*

b) *All questions of Section A are compulsory; questions in Section B and C contain choice.*

c) *IS Code:456-2000 is allowed.*

Section A: Very Short Answer type Questions Attempt all the questions.		**BL**	**CLO**	**Marks (10)**
1.	What do you mean by creep of concrete?	BL1	CLO1	02
2.	What is corbel?	BL1	CLO3	02
3.	Briefly explain the approximate analysis of grid floors according to IS: 456- 2000.	BL1	CLO4	02
4.	Discuss hot weather concreting.	BL1	CLO2	02
5.	What are the main advantages of Folded Plates?	BL1	CLO5	02
Section B: Short Answer Type Questions Attempt any 03 out of 05 questions.		**BL**	**CLO**	**Marks (30)**
1.	Define "Workability" of concrete. Describe the factors affecting the workability of fresh concrete.	BL2	CLO1	10
2.	Explain the design procedure of mix concrete.	BL2	CLO3	10
3.	List the various steps involved in the design of slender columns.	BL4	CLO3	10
4.	Describe the steps involved in yield line analysis of slabs.	BL2	CLO4	10
5.	Discuss general features of Folded Plates.	BL2	CLO5	10
Section C: Long Answer Type Questions/Case Study. Attempt any 01 out of 03 questions.		**BL**	**CLO**	**Marks (20)**
1.	Design a circular slab of diameter 7 m subjected to an imposed load of 4 kN/m^2. Assume that the slab is simply supported and is in mild environment. Use M20 grade concrete and Fe 415 grade steel for reinforcement.	BL6	CLO4	20
2.	Design a RCC column with effective height of 6 m and size 230 mm x 450 mm is subjected to an axial load of 600 kN.	BL6	CLO3	20
3.	Design a concrete mix for M35 grade with following data: (a) Type of : OPC 43 grade cement (b) Maximum size of aggregate : 20 mm (c) Exposure conditions : Mild (R.C.C.) (d) Workability : 125 mm slump (e) Minimum cement content : 320 kg/m^3 (f) Maximum W/C ratio : 0.45	BL6	CLO2	20

	(g) Method of placing concrete : Pumping (h) Degree of Supervision : Good (i) Type of aggregate : crushed angular aggregate (j) Superplasticizer will be used : No (k) Sp. Gravity of coarse aggregate : 2.80 (l) Sp. Gravity of Fine aggregate : 2.70			
