

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO/2023)

CLASS: BARCH
BRANCH: ARCH

SEMESTER : VII/ADD
SESSION : MO/2023

SUBJECT: AR402 STRUCTURAL DESIGN SYSTEM

TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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Q.1(a)	What is arch action?	[2]	CO	BL
Q.1(b)	Define load. List examples of live loads.	[3]	CO1	Understand
			CO1	Remember
Q.2(a)	What are arches? Draw the sketch of the trabeated arch with labels.	[2]	CO1	Remember
Q.2(b)	Demonstrate with a diagram the difference in structural behaviour of a cylindrical shell and arched vault in terms of location of support, spanning direction and load-carrying mechanism.	[3]	CO3	Apply
Q.3(a)	What is a vault? Mention any six types of vaults.	[2]	CO1	Remember
Q.3(b)	What is a flat plate system? Differentiate between two-way and one-way slab systems.	[3]	CO2	Understand
Q.4(a)	What is a drop panel in slabs? Mention its purpose.	[2]	Co1	Understand
Q.4(b)	Elaborate post-tensioning under a prestressed concrete system.	[3]	CO1	Understand
Q.5(a)	Explain tube-in-tube structure.	[2]	CO1	Understand
Q.5(b)	Draw the sketch deflected profile of a high-rise building under the influence of later wind pressure.	[3]	CO2	Apply

:::20/09/2023 M:::