

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: BARCH  
BRANCH: ARCHITECTURE**

**SEMESTER : VII  
SESSION : MO/2024**

**SUBJECT: AR402 STRUCTURAL DESIGN AND SYSTEM**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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			CO	BL
Q.1(a)	Discuss the deformation resulting in the structural component under force.	[5]	1	understand
Q.1(b)	In which ring of the dome cracks occur and why?	[5]	3	Apply
Q.2(a)	Discuss coffered slab advantages and disadvantages in the structural system	[5]	4	understand
Q.2(b)	How the folded plate structural system is advantageous for large-span spaces.	[5]	4	Apply
Q.3(a)	"Kinetic trends in architectural environments are dissected into four categories addressing the pragmatic or humanistic considerations, or both". Write the four categories of it	[5]	4	remember
Q.3(b)	Discuss the properties of the pneumatic structure.	[5]	4	understand
Q.4(a)	Difference between plane trusses and space trusses.	[5]	3	analyze
Q.4(b)	Discuss the Nomadic Museum structural system.	[5]	1	understand
Q.5(a)	Explain the Tube structure. What is the strategic placement of belt trusses on the structure?	[5]	2	analyse
Q.5(b)	Elaborate aerodynamic damping with sketch.	[5]	2	understand

:20/11/2024:M