

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code

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Fifth Semester B.E. Degree Examinations, September / October 2024

PREFABRICATED STRUCTURES

Duration: 3 hrs

Max. Marks: 100

*Note: 1. Answer any FIVE full questions choosing ONE full Question from each Module.
2. Missing data, if any, may be suitably assumed.*

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO:PI)</u>
<u>Module-1</u>			
1.	a. What is need for prefabrication and principles involved in prefabrication?	08	(2:1 : 1.2.1)
	b. Briefly explain advantages and disadvantages of prefabrication technique.	06	(2:1 : 1.2.1)
	c. Explain concept of standardization and disuniting of structures.	06	(2:1 : 1.2.1)
(OR)			
2.	a. Define modular coordination and explain the concept of modular coordination in prefabrication.	08	(2:1 : 1.2.1)
	b. Write a short note on transportation of prefabricated structures.	06	(2:1 : 1.2.1)
	c. What is system? Explain stand and conveyor belt and aggregate system of production of prefabricated structures.	06	(2:1 : 1.2.1)
<u>Module-2</u>			
3.	a. Explain in detail about large panel construction.	06	(2:2: 1.2.1)
	b. Write a short note on behaviour of short columns in prefabricated structures.	06	(2:2: 1.2.1)
	c. Define shear wall and explain the importance of shear wall construction in prefabricated structures.	08	(2:2: 1.2.1)
(OR)			
4.	a. Explain the merits and demerits of large panels.	06	(2:2: 1.2.1)
	b. Explain the construction of roof and floor slab in prefabricated structures.	08	(2:2: 1.2.1)
	c. Write a short note on prefabricated wall.	06	(2:2: 1.2.1)
<u>Module-3</u>			
5.	a. Explain design of cross section based on efficiency of materials used in prefabrication with neat sketches.	08	(2:3: 1.2.1)
	b. Explain in detail about allowance for joint deformation.	06	(2:3: 1.2.1)
	c. What are the advantages and disadvantages of disuniting of structures?	06	(2:3: 1.2.1)
(OR)			

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| 6. | a. Briefly explain classification of homogenous and composite prefabrication with neat sketches. | 08 | (2:3: 1.2.1) |
| | b. Explain problems involved in design of joint flexibility | 06 | (2:3: 1.2.1) |
| | c. Explain in detail about allowance for joint deformation. | 06 | (2:3: 1.2.1) |

Module-4

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| 7. | a. Define expansion joint and briefly explain the design of expansion joint in pre-cast structure. | 06 | (2:4:1.2.1) |
| | b. Explain the essential requirements of joints in precast structures | 06 | (2:4:1.2.1) |
| | c. What are dry joints and wet joints? | 08 | (2:4:1.2.1) |

(OR)

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| 8. | a. Define expansion joint and briefly explain the design of expansion joint in pre-cast structure. | 06 | (2:4:1.2.1) |
| | b. Explain the advantages of prefabrication over monolithic method of construction. | 06 | (2:4:1.2.1) |
| | c. Explain column to column connections with neat sketch. | 08 | (2:4:1.2.1) |

Module-5

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| 9. | a. Explain the procedure to calculate equivalent design loads when the subjected to earthquake loading. | 10 | (2:5:1.2.1) |
| | b. Explain the codal provision for progressive collapse. | 10 | (2:5:1.2.1) |

(OR)

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| 10 | a. Define abnormal loads and explain the causes of progressive collapse. | 10 | (2:5:1.2.1) |
| | b. Write a short note on methods of avoidance of progressive collapse. | 10 | (2:5:1.2.1) |

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