

Basavarajeswari Group of Institutions  
**BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

USN 

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Course Code 

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| 2 | 1 | C | V | 5 | 4 | 3 |
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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> |
|------------------------|--|--------------|---------------------|
| <b><u>Module-1</u></b> |  |              |                     |
| 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)       |
| <b>(OR)</b>            |  |              |                     |
| 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)       |
| <b><u>Module-2</u></b> |  |              |                     |
| 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)        |
| <b>(OR)</b>            |  |              |                     |
| 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)        |
| <b><u>Module-3</u></b> |  |              |                     |
| 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)        |
| <b>(OR)</b>            |  |              |                     |

**Note: (RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI- Performance Indicator)**

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

**Module-4**

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

**(OR)**

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

**Module-5**

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

**(OR)**

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

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