



**B.E DEGREE EXAMINATIONS: NOV/DEC 2022**

(Regulation 2018)

Seventh Semester

**CIVIL ENGINEERING**

U18CEE0002: Prefabricated Structures

**COURSE OUTCOMES**

- CO1:** Identify the principles and systems of prefabrication in the field  
**CO2:** Understand the various prefabricated components for specific use  
**CO3:** Understand the design principles for prefabricated structures  
**CO4:** Classify the structural connections  
**CO5:** Understand the various code provisions regarding progressive collapse

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 2 = 20 Marks)**

**(Answer not more than 40 words)**

- |  |     |                   |
|--|-----|-------------------|
| 1. List the characteristics to be considered while selecting the materials for prefabrication. | CO1 | [K <sub>2</sub> ] |
| 2. Define prefabrication.  | CO1 | [K <sub>2</sub> ] |
| 3. What is a shear wall?   | CO2 | [K <sub>2</sub> ] |
| 4. What are the advantages of large precast panels?  | CO2 | [K <sub>2</sub> ] |
| 5. Define form factor.   | CO3 | [K <sub>2</sub> ] |
| 6. Define dimensional tolerance.   | CO3 | [K <sub>2</sub> ] |
| 7. List the problems due to flexibility of joints.   | CO4 | [K <sub>2</sub> ] |
| 8. Define a rigid joint.   | CO4 | [K <sub>2</sub> ] |
| 9. What is progressive collapse?   | CO5 | [K <sub>2</sub> ] |
| 10. Define degree of progressivity.  | CO5 | [K <sub>2</sub> ] |

**Answer any FIVE Questions:-**

**PART B (5 x 16 = 80 Marks)**

**(Answer not more than 400 words)**

- |  |   |     |                   |
|--|---|-----|-------------------|
| 11. a) What is standardization? Explain in detail about standardization of prefabricated components. | 8 | CO1 | [K <sub>2</sub> ] |
| b) Define and explain modular coordination with neat sketches.                                       | 8 | CO1 | [K <sub>2</sub> ] |
| 12. a) What are large panel systems? Outline the advantages and limitations of large                 | 8 | CO2 | [K <sub>2</sub> ] |

- panel systems.
- b) Explain the procedure for casting of a precast I-profile concrete column with a neat sketch. 8 CO2 [K<sub>2</sub>]
13. a) Explain how a cross-section is designed based on efficiency of materials used? Also explain the importance of form factor. 8 CO3 [K<sub>3</sub>]
- b) List and explain various types of joints with neat sketches. 8 CO3 [K<sub>3</sub>]
14. a) List the types of connections used for various structural elements and explain any three types in detail with suitable sketches. 8 CO4 [K<sub>2</sub>]
- b) Outline the step-by-step procedure for design of expansion joint. 8 CO4 [K<sub>2</sub>]
15. a) Explain the various methods adopted for preventing disproportionate collapse. 8 CO5 [K<sub>2</sub>]
- b) List the various code provisions recommended for progressive collapse and explain any two codes in detail. 8 CO5 [K<sub>2</sub>]
16. a) Compare site and plant prefabrication. 8 CO1 [K<sub>2</sub>]
- b) Outline the classification of wall panels and explain any two in detail. 8 CO2 [K<sub>2</sub>]

\*\*\*\*\*