Reg. No.															

Question Paper Code	13492

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2025

Sixth Semester

Civil Engineering

20CEEL603 - PREFABRICATED STRUCTURES

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	The large reinforced concrete roofing members in prefabricated structures are (a) Directly supported by main girders (b) Two way reinforcement is provided (c) Directly supported on panel members (d) Provided with less reinforcement	1	K1	CO1
2.	If Joint deformation in the prefabricated structures is allowed It means (a) Allowance for joint flexibility (b) Allowance for swaying (c) Allowance for stress (d) Allowance for stress accumulation	1	K1	CO1
3.	Prefabrication is a _____construction method (a) Automotive (b) Modern (c) Established (d) Industrialised	1	K1	CO2
4.	Plant fabrication is suited for (a) large number of small prefabrication (c) standardized members (b) limited production (d) large long panel members	1	K1	CO2
5.	Which factor is essential when transporting prefabricated components to prevent crack formation? (a) Secure fastening (b) Low weight (c) High speed transport (d) Increased number of support points	1	K1	CO3
6.	What role does proper curing play in handling prefabricated structures? (a) Avoids freezing of hydrated cement (b) Minimizes shrinkage cracking during hardening (c) Decreases the weight of prefabricated units (d) Improves color consistency in concrete	1	K1	CO3
7.	What feature improves vertical shear distribution in beam connections? (a) Smooth edges (b) Painted surfaces (c) Grooved or rough edges (d) Tapered ends	1	K1	CO4
8.	What feature improves vertical shear distribution in beam connections? (a) Smooth edges (b) Grooved or rough edges (c) Painted surfaces (d) Tapered ends	1	K1	CO4
9.	Imagine a building scenario where prefabricated structures need to transfer both vertical and horizontal forces effectively. Which connection method is best suited for this scenario? (a) Smooth Edge Connection (b) Adhesive Bonding Connection (c) Grouted Connection with sleeves (d) Flexible Joint Connection	1	K1	CO5
10.	Which Indian Standard addresses wind loads in structural design? (a) IS 875 (Part 3) (b) IS 1893 (c) IS 3370 (d) IS 800	1	K1	CO6

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

11.	What are the Advantages of Prefabricated Structure?	2	K1	CO1
12.	Demonstrate modular co-ordination.	2	K2	CO1
13.	Classify various prefabricated structural units.	2	K2	CO2
14.	Recall the classification of precast large panel construction.	2	K1	CO2
15.	Recall briefly the disuniting of structures.	2	K2	CO3

16.	Define dimensional tolerances.	*2*	*K1*	*CO3*
17.	Classify the materials used for connection.	*2*	*K2*	*CO4*
18.	What are the different connections made in prefabricated structures?	*2*	*K1*	*CO4*
19.	Define expansion joint.	*2*	*K1*	*CO5*
20.	Classify between an open-drained joint and a face-sealed joint.	*2*	*K2*	*CO5*
21.	Define abnormal loads.	*2*	*K1*	*CO6*
22.	Classify between intensity and magnitude of earthquake.	*2*	*K2*	*CO6*

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a)	Explain the following			
		(i) Modular coordination.	*6*	*K2*	*CO1*
		(ii) Standardization.	*5*	*K2*	*CO1*
		OR			
	b)	Explain the production process of prefabricated structural elements.	*11*	*K2*	*CO1*
24.	a)	Summarize briefly large panel construction with neat sketches.	*11*	*K2*	*CO2*
		OR			
	b)	Summarize about different type of wall and slab system.	*11*	*K2*	*CO2*
25.	a)	Interpret about joint flexibility and allowance for joint deformation? Explain problems in detail.	*11*	*K2*	*CO3*
		OR			
	b)	Summarize the necessity of disuniting of structures and explain in detail with sketch.	*11*	*K2*	*CO3*
26.	a)	Construct about beam to column connection with neat sketches.	*11*	*K3*	*CO4*
		OR			
	b)	Construct about column to foundation connection with neat sketches.	*11*	*K3*	*CO4*
27.	a)	Explain in detail expansion and contraction joint.	*11*	*K2*	*CO5*
		OR			
	b)	Outline the essential requirements of joints in precast construction.	*11*	*K2*	*CO5*
28.	a)	Outline the methods to avoid the progressive collapse. Explain each briefly.	*11*	*K2*	*CO6*
		OR			
	b)	Interpret the codal provisions in the design for structures subjected to earthquakes.	*11*	*K2*	*CO6*