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Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U1206

B.E. / B.Tech DEGREE EXAMINATION, APRIL / MAY 2025

Professional Elective

Civil Engineering

21CEV206 - ADVANCED CONSTRUCTION TECHNIQUES

(Regulations 2021)

Duration: Three hours | Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which of the following is typically NOT a component of the substructure? CO1- U

   (a) Footings (b) Columns (c) Roof trusses (d) Piers

2. What type of foundation is often used in areas with expansive clay soils to prevent structural damage? CO1- U

   (a) Slab-on-grade (b) Pile foundation

   (c) Caisson foundation (d) Strip foundation

3. Vacuum dewatering helps in reducing which common issue in concrete floors? CO1- U

   (a) Cracking (b) Erosion (c) Scaling (d) Curing

4. What is the primary challenge in erecting tall structures? CO1- U

   (a) Finding enough construction workers

   (b) Managing construction costs

   (c) Dealing with wind loads and structural stability

   (d) Obtaining construction permits

5. Which construction method is commonly used for special structures that involve the assembly of pre-made components at the construction site? CO1- U

   (a) Cast-in-place construction (b) Modular construction

   (c) Traditional masonry (d) Timber framing

6. What is the primary factor that influences the choice of materials for special structure construction? CO1- U

(a) Availability of materials

(b) Aesthetics

(c) Cost-effectiveness

(d) Architectural design and engineering requirements

7. Which type of material is commonly used in the externally bonded reinforcement technique for strengthening structures? CO1- U

(a) Wood (b) Plastic

(c) Fiber-reinforced polymers (FRP) (d) Glass

8. What is the primary purpose of subgrade waterproofing in construction? CO1- U

(a) To enhance structural integrity

(b) To provide insulation

(c) To prevent moisture infiltration

(d) To improve aesthetics

9. Which of the following is NOT a common method used in building demolition? CO1- U

(a) Implosion (b) Wrecking ball (c) Controlled collapse (d) Elevation

10. What is building demolition? CO1- U

(a) The construction of a building

(b) The renovation of a building

(c) The process of tearing down a building

(d) The maintenance of a building

PART – B (5 x 2= 10Marks)

11. What is the substructure in construction? CO1- U

12. What are some potential challenges or limitations of vacuum dewatering? CO1- U

13. What is the general construction sequence for skyscrapers? CO1- U

14. What are the key considerations for a successful underpinning project? CO1- U

15. Enlist various demolition methods. CO1- U

PART – C (5 x 16= 80Marks)

16.	(a)	Describe the procedure for Box Jacking construction methodologies.	CO1 U	(16)
		Or		
	(b)	Describe the considerations to be carried out in underground foundation water seepage	CO1- U	(16)
17.	(a)	Discuss the Erection Techniques of Tall Structures in detail.	CO1- U	(16)
		Or		
	(b)	Elaborate on various Techniques of construction for continuous concreting operation in tall buildings	CO1- U	(16)
18.	(a)	Elaborately explain construction sequence in chimney Construction using slip form technique	CO2- App	(16)
		Or		
	(b)	Explain the process carried out in an Erection of articulated structures	CO2- App	(16)
19.	(a)	Describe about the inspection to be carried out during and after the construction of structure	CO1- U	(16)
		Or		
	(b)	Describe the concrete cracks may be sealed by using epoxy injection resin	CO1- U	(16)
20.	(a)	Explain in detail the Mechanical demolition with sequence	CO1- U	(16)
		Or		
	(b)	Describe the vertical drop method of demolition and its application	CO1- U	(16)