Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E /B.Tech (FULL TIME)(Arrear) - END SEMESTER EXAMINATIONS, NOV/DEC 2024

CIVIL ENGINEERING

VI Semester

CE 5691- Lean Concepts, Tools and Practices

(Regulation 2019)

Time: 180 minutes | Answer ALL Questions | Max. Marks : 100

CO 1	Explains the contemporary management techniques and the issues in present scenario.
CO 2	Apply the basics of lean management principles and their evolution from manufacturing industry to construction industry.
CO 3	Develops a better understanding of core concepts of lean construction tools and techniques and their importance in achieving better productivity.
CO 4	Apply lean techniques to achieve sustainability in construction projects.
CO 5	Apply lean construction techniques in design and modeling.

BL – Bloom's Taxonomy Levels
(L1 - Remembering, L2 - Understanding, L3 - Applying, L4 - Analysing, L5 - Evaluating, L6 - Creating)

PART- A (10 x 2 = 20 Marks)

Q. No.	Questions	Marks	CO	BL
1	How does lean construction impact construction productivity?	2	1	L4
2	How does optimisation of work performance in lean construction differ from optimisation in traditional construction?	2	1	L1
3	How can the Toyota philosophy apply to construction?	2	2	L5
4	What is meant by target value design?	2	2	L1
5	Differentiate Work structuring and production Control.	2	3	L3
6	Write briefly about concepts in lean thinking.	2	3	L3
7	What is meant by Poka Yoke?	2	4	L3
8	What is the use of buffers?	2	4	L4
9	Write a short note on Integrated Project Delivery.	2	4	L4
10	In what way is sustainability linked with lean construction?	2	5	L5

PART- B (5 x 13 = 65 Marks)

Q. No.		Questions	Marks	CO	BL
11.	a)	Explain different methods for Construction Progress & Productivity Measurement systems.	13	1	L1
		OR			
	b)	Explain the problems faced with the current construction management techniques.	13	1	L1
12.	a)	Explain how Toyoto's management helped the evolution of lean in the construction Industry.	13	2	L2
		OR			

	b)	Explain the different forms of waste found in the construction industry.	13	2	L2
13.	a)	Explain the 5 lean principles that can be apply to any organization.	13	3	L3
		OR			
	b)	How does lean construction differ from traditional construction methods?	13	3	L3
14.	a)	Explain the three levels of Schedule and Planning tools in LPS.	13	4	L3
		OR			
	b)	Explain the role of constraint analysis, Activity Definition Model and first run studies in Look ahead Schedule.	13	4	L3
15.	a)	Explain the Barriers and Challenges in Lean Implementation Process.	13	5	L4
		OR			
	b)	Explain what are the prerequisites required for implementing Lean Design and Construction	13	5	L4

PART- C (1 x 15 = 15 Marks)

Q. No.	Questions	Marks	CO	BL
16.	Explain how to enable lean management through Information technology in a construction project with an example	15	5	L5