RollNo. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APRIL / MAY 2025

CIVIL ENGINEERING
VI Semester

CE5691 - LEAN CONCEPTS, TOOLS AND PRACTICES

(Regulation2019)

Time:3hrs Max.Marks: 100

CO1	Explains the contemporary management techniques and the issues in present scenario.
CO2	Apply the basics of lean management principles and their evolution from manufacturing industry to construction industry.
CO3	Develops a better understanding of core concepts of lean construction tools and techniques and their importance in achieving better productivity.
CO4	Apply lean techniques to achieve sustainability in construction projects.
CO5	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 (10x2=20Marks)
(Answer all Questions)

Q. No.	Questions	Marks	CO	BL
1	What is the need for Construction Project Management?	2	1	3
2	How do you define productivity in construction?	2	1	2
3	How can the Toyota philosophy apply to construction, which lacks the uniformity and predictability of manufacturing cars in an enclosed building?	2	2	4
4	What is meant by target value design?	2	2	1
5	Differentiate Work structuring and production Control.	2	3	3
6	Differentiate Total Quality management and Six Sigma	2	3	3
7	What is meant by Poka Yoke?	2	4	1
8	What is a huddle? How long does a huddle last?	2	4	1
9	What are the tools used in Integrated project delivery?	2	5	2
10	How does implementation of lean impact on cost of the project?	2	5	5

PART- B (5x 13=65Marks)

Q. No.	Questions	Marks	CO	BL
11 (a)	Discuss the current construction management techniques problems and challenges.	13	1	2
	OR			
11 (b)	Discuss the different phases of construction and the productivity measurement system used in it.	13	1	2
12 (a)	Describe the types of waste found in construction projects by Toyota in mass production system. Provide examples	13	2	3
	OR			

12 (b)	Write in detail about the Just in Time Concept with an elaborated example.	13	2	3
13 (a)	What is 5S concept? How will 5S be implemented at a Construction site? Discuss the factors affecting the implementation of 5S?	13	3	4
	OR			
13 (b)	How does lean construction differ from traditional construction methods?	13	3	4
14 (a)	Explain the three levels of Schedule and Planning tools in Last Planner System.	13	4	2
	OR			
14 (b)	Explain Root cause analysis in detail with an example.	13	4	2
15 (a)	Explain the Barriers in Lean Implementation Process.	13	5	3
	OR			
15 (b)	Explain Integrated project delivery, Key elements of IPD, its Pros and cons.	13	5	3

PART- C(1x 15=15Marks)
(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16.	Draw a Value stream map for development of a product with an example of your discipline projects.	15	4	5