Q. Code:201067

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

B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Seventh Semester

CE18701 – PRINCIPLES OF CONSTRUCTION MANAGEMENT

(Civil Engineering)

(Regulation 2018)

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Describe the steps involved in project life cycle and explain the factors influencing changing environment of construction industry	**3**
CO 2	Identify the various risks and prepare the organizational structure for the construction project	**3**
CO 3	Summarise the design methodology, technological and economic feasibility involved in construction projects	**3**
CO 4	Describe how to manage Labour, Material and Equipment effectively in construction projects.	**3**
CO 5	Illustrate the different types of construction cost estimates	**3**

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Why construction financing is important?	**1**	**1**
2.	List out the various roles of project manager.	**1**	**1**
3.	Define ‘project’.	**2**	**1**
4.	Distinguish between Turnkey operation and Owner-Builder operation.	**2**	**2**
5.	Why it is necessary to integrate design and construction process?	**3**	**1**
6.	What is Value Engineering?	**3**	**1**
7.	Write short notes on order and purchase costs.	**4**	**1**
8.	Define labor productivity index.	**4**	**1**
9.	What are the different approaches involved in cost estimation?	**5**	**1**
10.	State the advantages of computer aided cost estimation?	**5**	**2**

PART- B (5 x 14 = 70 Marks)

			Marks	CO	RBT LEVEL
11. (a)	(i)	Explain the various factors that influence the changing operating environment of the construction industry.	(8)	1	3
	(ii)	Write short notes on different types of construction.	(6)		
		(OR)			
(b)		Explain the different phases of a project specifying the activities to be carried out in each of the phases.	(14)	1	3
12. (a)	(i)	Demonstrate the various trends to be adopted in modern management function and highlight its importance.	(8)	2	3
	(ii)	Why leadership and motivation necessary for the construction project?	(6)		
		(OR)			
(b)		Matrix organizations are a blend of functional and projectized characteristics – Explain with an example.	(14)	2	3
13. (a)		Why functional design is important? Illustrate in detail about the integrated functional design for hospital construction project.	(14)	3	3
		(OR)			
(b)	(i)	Market demand and firm size plays an important role in economic feasibility of construction project – Criticize your statement.	(8)	3	3
	(ii)	With flow chart, discuss the various steps involved in the conceptual design process.	(6)		
14. (a)	(i)	Discuss in detail about the various factors affecting the job-site productivity of construction project.	(8)	4	3
	(ii)	State the objectives and functions of material management.	(6)		
		(OR)			
(b)		A Power shovel with a dipper of 1.5 m^3 capacity has a standard operating cycle time of 60 seconds. The excavated material which has a swell factor of 1.08 will be disposed by a dump truck with a 7.5 m^3 capacity at a dumpsite 5 miles away. The average speed of a dump truck is 25 mph and the dumping time is 75 seconds. Both the power shovel and the dump truck are operated 8 hours per day. (a) Find the daily standard production rate of the power shovel. (b) Find the daily standard production rate of the dump truck and number of trucks required. (c) If the work conditions at the site that affect the productivity of the shovel can be represented by four factors $F_1 = 0.940$, $F_2 = 0.952$, $F_3 = 0.850$ and $F_4 = 0.750$, determine the job-site productivity and the actual cycle time. (d) If the work conditions at the site affect the productivity of the dump truck can be represented by three factors $F_1 = 0.952$, $F_2 = 0.700$ and $F_3 = 0.750$, determine the job site productivity of the dump truck, and the number of dump trucks required.	(14)	4	3

15. (a)	Enumerate the different types of construction cost estimates with an example.	**(14)**	**5**	**3**
	(OR)			
(b)	Briefly explain the effects of scale economics on construction cost with an example.	**(14)**	**5**	**3**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	A multistory building (G+20) was planned to be constructed in the outskirts of Chennai city. As a planning engineer, highlight the various risks associated with the construction project.	**(10)**	**2**	**4**