



**M.E DEGREE EXAMINATIONS: APRIL / MAY 2023**

(Regulation 2018)

Second Semester

**CONSTRUCTION MANAGEMENT**

P18CMT2001: Building Information Management

**COURSE OUTCOMES**

- CO1:** Understand the concept of structural system of a building.
- CO2:** Identify the environmental aspects required for a building.
- CO3:** Plan Buildings with respect to system integration.
- CO4:** Analyze the various construction components required in infrastructure sector.
- CO5:** Understand the safety and maintenance systems in construction.

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-  
PART A (10 x 1 = 10 Marks)**

1. Arrange the construction sequence of the structural system. CO1 [K<sub>1</sub>]
  - i) Foundation system
  - ii) Roof system
  - iii) Floor system
  - iv) Wall - Column system

a) Roof system---> Floor system---> Wall- Column system--->Foundation system	b) Foundation system--->Wall-Column system--->Floor system--->Roof system
c) Roof system--->Wall - Column system -- -> Floor system--->Foundation system	d) Foundation system--->Floor system---> Wall-Column system--->Roof system
2. Following construction works involving water supply, drainage systems, sanitation, electric supply and installation of lifts are categorized as CO1 [K<sub>2</sub>]

a) Building finishes	b) Building services
c) Building specification	d) Building components
3. What is the recommended range for relative humidity in indoor environments for optimal comfort and air quality? CO2 [K<sub>1</sub>]

a) 0-20%	b) 20-40%
c) 40-60%	d) 60-80%

4. Match the lamp type with its efficiency.

CO2 [K<sub>1</sub>]

Lamp	Lamp efficiency
A. Tungsten filament lamp	i. 15 - 40 lumen/watt
B. Neon discharge lamp	ii. 18 lumen/watt
C. Mercury vapour lamp	iii. 50 - 60 lumen/watt
D. Fluorescent lamp	iv. 30 - 40 lumen/watt

- a) A- ii; B- i; C-iv; D-iii                      b) A- ii; B- i; C-iii; D-iv  
c) A- i; B- ii; C-iv; D-iii                      d) A- ii; B- iv; C-i; D-iii

5. Assertion: Water pressure regulators are installed in plumbing systems.

CO3 [K<sub>2</sub>]

Reason: Water pressure regulators help maintain a consistent and safe water pressure throughout the plumbing system, preventing excessive pressure that could lead to pipe bursts or damage to fixtures.

Select the correct options.

- a) Both assertion and reason are correct, and the reason is the correct explanation of the assertion.                      b) Both assertion and reason are correct, but the reason is not the correct explanation of the assertion.  
c) The assertion is correct, but the reason is incorrect.                      d) The assertion is incorrect, but the reason is correct.

6. Which of the following considerations are important for the integration of electricity systems with structural systems?

CO3 [K<sub>2</sub>]

- a) Ensuring proper grounding and bonding of electrical equipment  
b) Incorporating electrical conduits within structural elements  
c) Implementing fire-resistant electrical insulation materials  
d) Utilizing structural components as electrical conductors  
e) Installing electrical wiring without considering structural integrity

Select the correct options.

- a) a, b, c    b) b, c, d  
c) b, d, e    d) a, c, d

7. Which of the following is a key benefit of integrating smart systems in building automation?

CO4 [K<sub>1</sub>]

- a) Increased manual control and monitoring                      b) Limited flexibility and customization options  
c) Improved energy efficiency and cost reduction                      d) Higher maintenance and operational costs

8. The current highway development works in India are undertaken by \_\_\_\_\_ . CO4 [K<sub>1</sub>]  
 a) NHDP b) State governments  
 c) Govt. of India d) NHAI
9. Select all the planning systems that contribute to using materials for least maintenance during the construction process. CO5 [K<sub>2</sub>]  
 i.) Conducting regular inspections during construction  
 ii.) Incorporating conventional techniques  
 iii.) Proper storage and handling of materials  
 iv.) Incorporating durable and low-maintenance materials  
 a) Both (i) and (iii) are correct b) Both (ii) and (iv) are correct  
 c) Both (i) and (iv) are correct d) Both (ii) and (iii) are correct
10. Assertion: Fire preventive systems include the installation of smoke detectors. CO5 [K<sub>3</sub>]  
 Reason: Smoke detectors and Multiple exits in one of the best fire escape systems.  
 Select the correct options.  
 a) Both assertion and reason are correct, and the reason is the correct explanation of the assertion. b) Both assertion and reason are correct, but the reason is not the correct explanation of the assertion.  
 c) The assertion is correct, but the reason is incorrect. d) The assertion is incorrect, but the reason is correct.

**PART B (10 x 2 = 20 Marks)**

11. Infer on "Efficient Space Planning". CO1 [K<sub>2</sub>]
12. Explain the term Functional aesthetic system. CO1 [K<sub>5</sub>]
13. List the techniques to integrate natural lighting with building. CO2 [K<sub>1</sub>]
14. Define Thermal infiltration. CO2 [K<sub>1</sub>]
15. List the key considerations for choosing vertical circulations in a building system. CO3 [K<sub>1</sub>]
16. Define system integration. CO3 [K<sub>1</sub>]
17. Identify the main components of the Aviation system. CO4 [K<sub>3</sub>]
18. Summarize the major Construction component for Oil and gas plants. CO4 [K<sub>2</sub>]
19. Outline the considerations while ensuring Access for maintenance. CO5 [K<sub>2</sub>]
20. Name a few Hazard free construction steps. CO5 [K<sub>1</sub>]

**PART C (6 x 5 = 30 Marks)**

- |   |     |                    |
|---|-----|--------------------|
| 21. Explain the various types of building systems.  | CO1 | [K <sub>5</sub> ]  |
| 22. Explain the key design elements to achieve weather resistance in a building.                          | CO2 | [K <sub>5</sub> ]  |
| 23. Explain the key aspects of Integration of the Electrical system with the building.                    | CO3 | [K <sub>5</sub> ]  |
| 24. Compile the various construction components of telecom infrastructure with proper Material selection. | CO4 | [K <sub>6</sub> ]  |
| 25. Plan a system to protect and prevent fire in buildings.   | CO5 | [K <sub>L3</sub> ] |
| 26. Compile the benefits of selecting materials that require least maintenance.                           | CO5 | [K <sub>6</sub> ]  |

**Answer any FOUR Questions**

**PART D (4 x 10 = 40 Marks)**

- |   |     |                   |
|---|-----|-------------------|
| 27. Discuss the key considerations while selecting materials for building construction. | CO1 | [K <sub>6</sub> ] |
| 28. Assess major design considerations to attain Acoustic control in buildings.         | CO2 | [K <sub>5</sub> ] |
| 29. Justify the importance of Technological demands on construction management.         | CO3 | [K <sub>5</sub> ] |
| 30. Develop construction components framework for Irrigation system.                    | CO4 | [K <sub>6</sub> ] |
| 31. Formulate the guidelines for executing pollution free construction.                 | CO5 | [K <sub>6</sub> ] |

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