



Paper ID : 260687

Printed Page: 1

Subject Code:BOE091

Roll No:

BTECH

(SEM. VIII) THEORY EXAMINATION 2025-26
BIM FOR SUSTAINABLE BUILDING PLANNING

TIME: 3 HRS

M.MARKS: 70

Note: Attempt all Sections. In case of any missing data; choose suitably.

SECTION A

1. Attempt *all* questions in brief.

02 x 7 = 14

Q no.	Question	CO	LEVEL
a.	Define BIM. How does it differ from traditional 2D CAD?	CO1	K2
b.	Mention two ethical considerations when sharing digital construction data.	CO5	K2
c.	What is "Passive Cooling," and how does it reduce a building's energy load?	CO2	K2
d.	Differentiate between a percolation pit and a recharge well.	CO3	K2
e.	What is "Greywater," and how can it be reused at a planning level?	CO3	K2
f.	Compare On-grid and Off-grid solar PV systems.	CO4	K2
g.	What is the cultural intent behind the origin of Vastu Shastra?	CO5	K2

SECTION B

2. Attempt any *three* of the following:

07 x 3 = 21

Q no.	Question	CO	Level
a.	What is "clash detection" in the context of architecture, structure, and MEP coordination?	CO1	K3
b.	Define Life Cycle Thinking (LCT) in the context of building materials.	CO2	K3
c.	Why is site layout integration important for an effective Rainwater Harvesting (RWH) system?	CO3	K3
d.	How does shading from neighboring buildings affect rooftop solar planning?	CO4	K3
e.	Define "Functional Zoning" in building planning.	CO5	K3

SECTION C

3. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Discuss the evolution of the construction industry from 2D drafting to BIM workflows. How does this transition improve project feasibility?	CO1	K4
b.	Explain the role of BIM in the development of "Smart Cities" and large-scale government infrastructure projects.	CO1	K3

4. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Explain various daylighting strategies used to maximize natural light while controlling glare in an office building.	CO2	K3
b.	Describe how orientation and building envelope design can achieve thermal comfort without relying heavily on air conditioning.	CO2	K4



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5. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Design a conceptual plan for a Rooftop Rainwater Harvesting system for a residential complex. Include components like filters, storage, and recharge structures.	CO3	K4
b.	Discuss the challenges of the urban water crisis and how "Water-Sensitive Urban Design" can help cities become more resilient to climate change.	CO3	K4

6. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Describe the essential planning decisions required to optimize a building's envelope for energy efficiency.	CO4	K3
b.	Explain the basics of Solar Thermal systems versus Solar PV systems. Which is more suitable for a hotel requiring large amounts of hot water?	CO4	K3

7. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Discuss the compatibility of Vastu Shastra principles (like orientation and light) with modern engineering and scientific planning.	CO5	K4
b.	What are the ethical responsibilities of a planning engineer when dealing with client demands that may conflict with sustainability or safety?	CO5	K4