



Enrollment No.....

## Faculty of Engineering

End Sem (Odd) Examination Dec-2022

OE00037 Green Building Technologies

Programme: B.Tech.

Branch/Specialisation: All

**Duration: 3 Hrs.****Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.


- Q.1 i. Among these which is not an objective of green building? **1**  
 (a) Optimising energy efficiency  
 (b) Using less water  
 (c) Consume non-renewable natural resources  
 (d) Generates less waste
- ii. VOCs stands for - **1**  
 (a) Volatile Outdoor Chemicals  
 (b) Various Organic Compounds  
 (c) Volatile Organic Compounds  
 (d) Vitreous Outdoor Chemicals
- iii. The south side of chajjas can- **1**  
 (a) Obstruct heat of summer sun  
 (b) Obstruct heat of winter sun  
 (c) Allows maximum light in summer  
 (d) Allow zero heat radiation transfer in winter
- iv. Building orientation is the \_\_\_\_\_ of a building on a site. **1**  
 (a) Constructing (b) Design  
 (c) Heating (d) Positioning
- v. Which is a part of passive solar design? **1**  
 (a) Aperture (b) Chilled slab  
 (c) Ceiling panel (d) Baffles
- vi. The indirect gain system will utilize \_\_\_\_\_ of the **1**  
 sun's energy striking the glass adjoining the thermal mass.  
 (a) 30 – 45% (b) 60-70% (c) 75-80% (d) 100%
- vii. Insulating glass is commonly known as- **1**  
 (a) Solarium (b) Sunspace  
 (c) Double glazed window (d) Thermal mass

- viii. DF values for study room, is- **1**  
 (a) 2.9 minutes (b) 19 flux (c) 1.90% (d) 2.9 flux
- ix. LCA stands for- **1**  
 (a) Life Cycle Assessment (b) Life Cycle Analysis  
 (c) Life Circle Analysis (d) Load Cycle Analysis
- x. Among these which is not a waste management's basic step? **1**  
 (a) Reduce waste (b) Reuse Waste  
 (c) Recycling waste (d) Rearrange waste
- Q.2 i. Write detailed note on VOCs. **4**  
 ii. Explain various rating system of green building in detail. **6**
- OR iii. Explain various sustainable practices used in the green building design in detail. **6**
- Q.3 i. Explain various renewable energy sources in detail. **4**  
 ii. Explain various climate zone & their characteristics in detail. **6**
- OR iii. What do you understand by the term micro climate? Explain how we can improve the microclimate condition. **6**
- Q.4 i. Discuss about radiant and desiccant cooling. **4**  
 ii. Write short note on (any two): **6**  
 (a) Roof top collectors (b) Passive cooling techniques  
 (c) Thermal storage wall
- OR iii. Write short note on: **6**  
 (a) Direct gain (b) Indirect gain  
 (c) Solarium
- Q.5 i. Write down various steps to reduce energy demand of building. **4**  
 ii. Define native landscaping. Explain its advantages and disadvantages. **6**
- OR iii. Write detailed note on water management system in detail. **6**
- Q.6 Attempt any two:  
 i. Write detailed note on eco-friendly material for green building. **5**  
 ii. Write short note on- **5**  
 (a) Transportation energy (b) Embodied energy  
 iii. Write detailed note on life cycle assessment. **5**

P.T.O.

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## Scheme of Marking

	<b>Faculty of Engineering</b> <b>End Sem (Odd) Examination Dec-2022</b> <b>OE00037 Green Building Technology</b>	
	Programme: B.Tech.	Branch/Specialisation:

Note: The Paper Setter should provide the answer wise splitting of the marks in the scheme below.

Q.1	i)	c. Consume non-renewable natural resources	1
	ii)	c. Volatile Organic Compounds	1
	iii)	a. Obstruct heat of summer sun	1
	iv)	d. Positioning	1
	v)	a. Aperture	1
	vi)	<del>b. 60-70%</del> (a) 30-45%	1
	vii)	c. Double Glazed window	1
	viii)	c. 1.90%	1
	ix)	a. Life Cycle Assessment	1
	x)	d. Rearrange waste	1
Q.2	i.	Give 4 marks for proper explanation of VOCs.	
	ii.	Give 2 marks for correct explanation of each type of Rating system of green building i.e. give 6 marks for 3 types.	
	OR iii.	Give 2 marks for correct explanation of each sustainable practice i.e. give 6 marks for 3 methods	
Q.3	i.	Give 2 marks for correct explanation of each renewable energy devices i.e. give 4 marks for 2 device.	
	ii.	For proper explanation of climate zone and its characteristics give 6 marks.	
	OR iii.	On definition of micro-climate – Give 1 marks Give 1 mark for each condition i.e. give 5 marks for 5 conditions.	
Q.4	i.	For proper explanation of Radiant, give 2 marks. For proper explanation of Desiccant Cooling, give 2 marks.	

	ii.	For proper explanation give 3 marks for each point.	
OR	iii.	For proper explanation give 2 marks for each point	
Q.5	i.	Give 4 marks for 4 steps to reduce energy demand of building.	
	ii.	Definition- 1 marks Advantages- 2.5 marks Disadvantages- 2.5 marks	
	OR iii.	Give 6 marks for correct explanation.	
Q.6	i.	Give 5 marks for correct explanation.	
	ii.	For proper explanation of Transportation Energy, give 2.5 marks. For proper explanation of Embodied Energy, give 2.5 marks.	
	iii.	Give 5 marks for correct explanation.	

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