

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2019
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. | Green building practices includes | 1 |
| | | (a) Only energy efficiency | |
| | | (b) Only recycled material | |
| | | (c) Only environmental protection | |
| | | (d) All of these | |
| | ii. | LEED means | 1 |
| | | (a) Leadership in Ecological and Environmental design | |
| | | (b) Leadership in Energy and Environmental design | |
| | | (c) Leadership in Efficiency and Environmental Design | |
| | | (d) Leadership in Efficiency and Ecological Design | |
| | iii. | Which among the following is not a renewable source of energy? | 1 |
| | | (a) Solar energy (b) Biomass energy | |
| | | (c) Geo-thermal energy (d) Hydropower energy | |
| | iv. | Which of the following is a disadvantage of renewable energy? | 1 |
| | | (a) High pollution (b) Available only in few places | |
| | | (c) High running cost (d) Unreliable supply | |
| | v. | Which type of ventilation require less energy and maintenance cost | 1 |
| | | (a) Mechanical (b) Natural | |
| | | (c) Automatic (d) None of these | |
| | vi. | PDEC means | 1 |
| | | (a) Passive Downdraft Evaporative Cooling | |
| | | (b) Passive Direct Efficient Cooling | |
| | | (c) Passive Direct Evaporative Cooling | |
| | | (d) Passive Downdraft Efficient Cooling | |

P.T.O.

[2]

- vii. The process of burying of municipal solid waste at high temperature is called **1**
 (a) Incineration (b) Land Filling
 (c) Composting (d) Shredding
- viii. Which Gas produced in open dumps from the decomposition of biodegradable waste? **1**
 (a) Ethane (b) Methane (c) Propane (d) Ethene
- ix. Rapidly renewable material include such as **1**
 (a) Bamboo (b) Cork (c) Cotton (d) All of these
- x. Benefit of rapidly renewable material **1**
 (a) Reduce the use of raw material
 (b) Reduce the number and quantity of material
 (c) Reduce demand for material that require longer to regenerate
 (d) All of these
- Q.2 i. Elaborate the Green Building concept? Give any one example of any Green Building? **3**
 ii. What is GRIHA, LEED and IGBC? Also explain the various parameter and process on which building rated as a green building? **7**
- OR iii. What are the different sustainable practices used in the design and construction phases of Energy Efficient Green Building? **7**
- Q.3 i. How climate affect the building design? **3**
 ii. What is micro climate? How we can improve the microclimate condition? **7**
- OR iii. What are the different climatic zones and their characteristic in India? How this data is used in building design? **7**
- Q.4 i. Discuss principle of Energy Conscious Design of hot and dry climate of India? **4**
 ii. Write short note on Earth Coupling and Earth Air Pipe System? **6**
- OR iii. Write short note on: **6**
 (a) Thermal Storage Wall (b) Passive Cooling Techniques
 (c) Wind tower

[3]

- Q.5 i. What is the basic principle of Day Lighting? **2**
 ii. How following feature helpful in designing Energy Efficient Building: **8**
 (a) Orientation of Building (b) Sunshades
 (c) Landscaping (c) Window Design
- OR iii. What is Solid Waste Management? Also explain the methods of Solid Waste management? **8**
- Q.6 Attempt any two:
 i. Write short note on Recycling on Industrial and Building Waste? **5**
 ii. Write detailed note on Eco-Friendly material for Green Building? **5**
 iii. What are the various Resources of Building Material? Explain each resource? **5**

Marking Scheme
OE00037 Green Building Technologies

Q.1	i.	Green building practices includes		1
		(d) All of these		
	ii.	LEED means		1
		(b) Leadership in Energy and Environmental design		
	iii.	Which among the following is not a renewable source of energy?		1
		(b) Biomass energy		
	iv.	Which of the following is a disadvantage of renewable energy?		1
		(d) Unreliable supply		
	v.	Which type of ventilation require less energy and maintenance cost		1
		(b) Natural		
Q.2	vi.	PDEC means		1
		(a) Passive Downdraft Evaporative Cooling		
	vii.	The process of burying of municipal solid waste at high temperature is called		1
		(a) Incineration		
	viii.	Which Gas produced in open dumps from the decomposition of biodegradable waste?		1
		(b) Methane		
	ix.	Rapidly renewable material include such as		1
		(d) All of these		
	x.	Benefit of rapidly renewable material		1
		(d) All of these		
Q.2	i.	Green Building concept	2 marks	3
		Any one example of any Green Building	1 mark	
	ii.	GRIHA	1 mark	7
		LEED	1 mark	
		IGBC	1 mark	
		Parameter	2 marks	
		Process	2 marks	
OR	iii.	Sustainable practices used in the design and construction phases of Energy Efficient Green Building		7
		1 mark for each point	(1 mark * 7)	

Q.3	i.	Climate affect the building design		3
	ii.	Micro climate	3 marks	7
		Improve the microclimate condition	4 marks	
	OR	iii.		7
		Different climatic zones	2 marks	
		Their characteristic in India	2 marks	
		Data is used in building design	3 marks	
Q.4	i.	Principle of Energy Conscious Design of hot and dry climate		4
	ii.	Earth Coupling	3 marks	6
		Earth Air Pipe System	3 marks	
	OR	iii.		6
		Write short note on:		
		(a) Thermal Storage Wall	2 marks	
		(b) Passive Cooling Techniques	2 marks	
		(c) Wind tower	2 marks	
Q.5	i.	Basic principle of Day Lighting		2
	ii.	Feature helpful in designing Energy Efficient Building:		8
		2 marks for each	(2 marks *4)	
	OR	iii.		8
		Solid Waste Management	2 marks	
		Methods of Solid Waste management		
		1.5 marks for each method (1.5 marks * 4)	6 marks	
Q.6		Attempt any two:		
	i.	Recycling on Industrial	2.5 marks	5
		Recycling on Building Waste	2.5 marks	
	ii.	Eco-Friendly material for Green Building		5
		1 mark for each material	(1 mark * 5)	
	iii.	Resources of Building Material		5
		1 mark for each resource explanation	(1 mark * 5)	
