Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–VII (NEW) EXAMINATION – WINTER 2024

Subject Code:3170629 Date:30-11-2024

Subject Name: Green Built Environment

Time:10:30 AM TO 01:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Differentiate between development and sustainable development	**03**
	(b)	Explain the factors affecting soil erosion.	**04**
	(c)	What is the difference between surface runoff harvesting and rooftop rainwater harvesting? Explain the components of rooftop rainwater harvesting system.	**07**
Q.2	**(a)**	Enlist different eco-friendly wood-based materials used in building construction	**03**
	(b)	What is a green parking lot? Explain any one method for its design.	**04**
	(c)	Explain the Structure of the LEED Suite of building assessment systems	**07**
		OR	
	(c)	Explain passive architect design using simulation approach and prescriptive approach.	**07**
Q.3	**(a)**	Give three examples of reuse of water in a household.	**03**
	(b)	Which are the major energy consuming activities in the buildings?	**04**
	(c)	What is construction waste? Give examples of reuse of construction waste? Enlist the methods used for disposal of construction waste.	**07**
		OR	
Q.3	**(a)**	Give three examples of reuse of domestic wastewater.	**03**
	(b)	Explain the role of CO_2 is greenhouse effect and global warming.	**04**
	(c)	Write a short note on alternative construction material.	**07**
Q.4	**(a)**	What are green buildings? Write any three features of green building.	**03**
	(b)	Discuss the types of natural ventilation used in the building.	**04**
	(c)	What is the urban heat island effect? How can we mitigate urban heat islands? How do cool roofs and solar-reflective walls work?	**07**
		OR	
Q.4	**(a)**	State the three different techniques of generating renewable energy on-site.	**03**
	(b)	How the use of low VOC material helps in achieving better indoor air quality?	**04**
	(c)	Explain the methods of minimizing energy transmission through the building skin.	**07**
Q.5	**(a)**	Explain the role of CFC and HCFC in ozone depletion	**03**
	(b)	Why segregation of house hold waste is an important step before the ultimate disposal?	**04**
	(c)	Define following Daylight & Electric Light Metrics: 1. Illuminance 2. Useful daylight illuminance 3. Daylight factor 4. Vertical sky component 5. Annual sunlight exposure 6. Luminance 7. Room cavity ratio	**07**

OR

Q.5	**(a)**	Give examples of water efficient plumbing fixtures. Why they should be used?	**03**
	(b)	Explain the methods which can be used to properly handle the organic solid waste generated from a residential facility.	**04**
	(c)	Write a short note on Integrated Energy Monitoring System.	**07**

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