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Code No. : 13165 N/O (J)

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. III-Semester Main and Backlog Examinations, Jan./Feb.-2024

Green Buildings (OE-I)

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	Define the term Air change in a room. In a residential building which room requires more air changes and why?	2	1	1	1
2.	What are the benefits of rain water harvesting?	2	1	1	1
3.	Illustrate the stages of a building material's lifecycle chronologically.	2	2	2	1
4.	Define carbon footprint & Equivalent carbon.	2	1	2	7
5.	What are the benefits of Green buildings?	2	1	3	1
6.	Define runoff and What is the formula for runoff volume?	2	1	3	1
7.	Why is obtaining green building certification is important?	2	1	4	1
8.	Expand LEED and GRIHA	2	1	4	1
9.	Write about the factors affect the orientation of building.	2	1	1	1
10.	Explain how does the orientation of a building impact its energy efficiency?	2	2	2	6
Part-B (5 × 8 = 40 Marks)					
11. a)	Explain the Building bye-laws with reference to open space requirements.	4	2	1	6
b)	Expand and Define FAR. Calculate the FAR of a building of 1500 square feet floor area in a plot area of 5000 square feet.	4	3	1	6
12. a)	List out the elements of green building? Discuss any three of them briefly.	4	2	2	7
b)	Discuss about the Environmental impacts occurred by the construction industry?	4	3	2	7
13. a)	Explain any two Innovative Cooling solutions in green buildings	4	2	3	7
b)	Discuss the criteria for water conservation in a green building construction.	4	2	3	7
14. a)	Explain briefly about the IGBC rating system.	4	2	4	1
b)	Discuss any case study of a IGBC certified Green building in detail.	4	3	4	7

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15. a)	Discuss about the following principles of planning of a Residential Building. i) Aspect ii) Prospect iii) Privacy iv) Sanitation	4	3	1	1
b)	Explain briefly about the parameters which are considered for the assessment of materials.	4	3	2	1
16. a)	Discuss the essential criteria for selecting a site suitable for green building construction.	4	3	3	7
b)	Compare and contrast GRIHA and LEED certification systems.	4	3	4	1
17.	Answer any <i>two</i> of the following				
a)	List out the factors to be considered for the selection of site for Residential building? Explain any three of the factors briefly.	4	3	1	1
b)	Discuss about the impacts caused by the production of any to building materials.	4	2	2	7
c)	Explain passive solar architecture and its role in green buildings.	4	2	3	7

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	40%
iii)	Blooms Taxonomy Level – 3 & 4	40%

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