

**ANURAG Engineering College**

(An Autonomous Institution)

III B.Tech I Semester Regular/Supplementary Examinations, Dec–2023/Jan-2024

**GREEN BUILDING MATERIALS AND TECHNOLOGIES**

(CIVIL ENGINEERING)

**Time: 3 Hours****Max. Marks: 75****Section – A (Short Answer type questions)****(25 Marks)****Answer All Questions**

	<b>Course Outcome</b>	<b>B.T Level</b>	<b>Marks</b>
1. List down the indoor activities that have direct influence on the indoor air quality.	CO1	L1	2M
2. What are the different energy uses in a typical residential building?	CO1	L2	3M
3. What do you understand by horizontal and vertical ventilation?	CO2	L1	2M
4. Explain, briefly, how Air conditioning System works?	CO2	L2	3M
5. What do you understand by WIND FARMS?	CO3	L1	2M
6. Explain the best orientation of the building to get maximum benefits from the natural sun light	CO3	L2	3M
7. Define the term “NET ZERO CARBON EMISSION”	CO4	L1	2M
8. What do you understand by the term “Building Envelop”?	CO4	L2	3M
9. Why Energy Audit is Important?	CO5	L1	2M
10. List down the parameters involved in GRIHA rating	CO5	L2	3M

**Section B (Essay Questions)****Answer all questions, each question carries equal marks.****(5 X 10M = 50M)**

11. A) What are the different components of green building? With sketch, explain a typical concept of a green building	CO1	L3	10M
<b>OR</b>			
B) Discuss in detail various measure that can be taken to improve the indoor air quality.	CO1	L3	10M
12. A) Discuss in detail how does ventilation affect air quality and thermal comfort? What are the 4 most important factors in thermal comfort?	CO2	L3	10M
<b>OR</b>			
B) What are the requirements for illumination in the workplace, construction site and hospital building?	CO2	L3	10M
13. A) What are the relationship between solar system and the Earth? How does the Earth sun relationship affect your life?	CO3	L3	10M
<b>OR</b>			
B) How does orientation affect energy consumption in building design? What are the factors affecting the orientation of a building?	CO3	L3	10M
14. A) Is lighting part of indoor air quality? How does air pollution affect light pollution? How does light affect health?	CO4	L3	10M
<b>OR</b>			

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| B)        | What is the relationship between energy sources (renewable and non-renewable) and air quality? How does energy consumption affect air pollution? | CO4 | L3 | 10M |
| 15. A)    | What is energy audit of a building? What are the different types of energy audit?  | CO5 | L3 | 10M |
| <b>OR</b> |  |     |    |     |
| B)        | How GRIHA is different from LEED rating? What is the significance of GRIHA rating?   | CO5 | L3 | 10M |