

Reg. No. : 

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<b>Question Paper Code : 41022</b>
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B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Seventh Semester

Aeronautical Engineering

OEN 751 — GREEN BUILDING DESIGN

(Common to : Aerospace Engineering/Agriculture Engineering/  
Automobile Engineering/Biomedical Engineering/Civil Engineering/Computer  
Science and Engineering/Computer and Communication Engineering/Electronics  
and Communication Engineering/Electronics and Telecommunication  
Engineering/Geoinformatics Engineering/Industrial Engineering/Industrial  
Engineering and Management/Manufacturing Engineering/Marine  
Engineering/Material Science and Engineering/Mechanical Engineering/Mechanical  
Engineering (Sandwich)/Mechanical and Automation Engineering/Mechatronics  
Engineering/Medical Electronics/Petrochemical Engineering/Production  
Engineering/Robotics and Automation/Bio Technology/Chemical  
Engineering/Chemical and Electrochemical Engineering/Fashion Technology/Food  
Technology/Handloom and Textile Technology/Information  
Technology/Petrochemical Technology/Petroleum Engineering/Pharmaceutical  
Technology/Textile Chemistry/Textile Technology)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define the term Green House effect.
2. State the environmental impacts of brick manufacturing.
3. List the factors that influencing quality of recycled aggregates.
4. Under what circumstances Masonry building will be considered as energy efficient structure.
5. Mention the importance of natural ventilation.
6. Write the equation to calculate the Indoor Operative Temperature.

7. Differentiate between glass SHGC and window unit SHGC.
8. List a few solar PV materials.
9. Write the impacts of unplanned construction activity.
10. Name the types of urban green cover.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the cement manufacturing process with neat sketch. (13)

Or

- (b) (i) Discuss briefly about the features of green building in India. (7)
- (ii) List the steps involved in PAS2050 assessment process. (6)
12. (a) Identify the top five sustainable building materials and mention the salient features with examples. (13)

Or

- (b) (i) State the application of biomass fiber in construction area. (6)
- (ii) What are the factors affecting the energy use in building? (7)
13. (a) Write short note on
- (i) Elevated air speed (4)
- (ii) Mixed Mode Ventilated Buildings (5)
- (iii) Paper Insulation. (4)

Or

- (b) Explain about the heat transfer characteristic of building materials. (13)
14. (a) How to assign the window orientation while planning stage with designing for various climatic conditions? (13)

Or

- (b) (i) Discuss why solar powered buildings are energy efficient? (7)
- (ii) State advantages of solar energy over other forms of energy. (6)

15. (a) (i) What are the five principles to achieve sustainable planning of housing? (7)  
(ii) Write short notes on green technology for water treatment. (6)

Or

- (b) (i) Describe zero waste management with the help of case study. (7)  
(ii) Define the concept gray water reuse and list the factors influencing it. (6)

PART C — (1 × 15 = 15 marks)

16. (a) Explain the process of Construction and Demolition waste management in India with their limitations. (15)

Or

- (b) Analyze the green building rating systems in India with real examples and process involved. (15)

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