

Enrollment No.....



Faculty of Engineering
End Sem Examination Dec-2023
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. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. A well-design building envelope _____ the entry of contaminated air and moisture. **1**
(a) Allows (b) Increases (c) Eliminates (d) Induce
- ii. Building orientation is the _____ of a building on a site. **1**
(a) Positioning (b) Design
(c) Heating (d) Cooling
- iii. Among these what is/are the factors considered for building design- **1**
(a) Temperature (b) Humidity
(c) Wind path (d) All of these
- iv. Among these which is not an advantage of SWHS- **1**
(a) Consumption of renewable energy sources
(b) Saving on electricity bill
(c) More initial cost
(d) Less maintenance
- v. Light has a direct effect on the regulation of- **1**
(a) Sleep (b) Memory (c) Malaria (d) Body temperature
- vi. Flux is the measure of- **1**
(a) Water in toilet (b) Humidity
(c) Brightness of light (d) Wavelength of light
- vii. Following is the disadvantage of glazed windows- **1**
(a) Saving on energy bills (b) Soundproofing in home
(c) Improve security (d) More initial cost

[2]

- viii. Primary function of window is- **1**
(a) To permit streetlight in building
(b) To monitor unwanted activity outside the building
(c) Provision of outside view to the occupants.
(d) All of these
- ix. Among these which ingredients of concrete has highest embodied energy- **1**
(a) Cement (b) Sand (c) Aggregate (d) Water
- x. Construction waste is- **1**
(a) Biodegradable (b) Organic waste
(c) Manageable (d) Non manageable
- Q.2 i. What is volatile organic compound and its impact on human health? **4**
ii. Enlist any four green building rating system in the world. Explain Indian rating system GRIHA in detail. **6**
- OR iii. Explain indoor humidity, visual comfort and brownfield development. **6**
- Q.3 Attempt any two:
i. Write a short note on solar water heating system with diagram. **5**
ii. What do you understand by NBC? Describe the latest added points in NBC. **5**
iii. Write a note on climate zone in India. **5**
- Q.4 Attempt any two:
i. Explain any one passive downdraft evaporative cooling device with diagram. **5**
ii. Explain the induced ventilation with the help of diagram. **5**
iii. Explain earth coupling and its types. **5**
- Q.5 Attempt any two:
i. What do you understand by native landscaping and double-glazed window. **5**
ii. Write a short note on onsite sources and sinks of energy. **5**
iii. Explain management of solid waste in detail. **5**

[3]

- Q.6 Attempt any two:
i. What are the steps of selection of construction material for green building? **5**
ii. Write a detailed note on embodied energy and transportation energy. **5**
iii. How can we reduce waste during construction? Explain in detail. **5**

Q.1 (i) CC)

OE00037

(ii) (a)

(iii) (d)

(iv) CC)

(v) (a)

(vi) CC)

(vii) (d)

(viii) (d)

(ix) (a)

(x) CC)

Q.2 (i) 2 marks for definition of VAC
2 marks for impact of VAC.

(ii) 2 marks for four green building rating system.

4 marks for GRIHA explanation in detail

OR

(iii) 2 marks for indoor humidity definition

2 marks for visual comfort definition

2 marks for brown field development definition

Q.3 (i) for correct explanation with diagram
full marks should be awarded
(max 5 marks)

(ii) 1 marks for explanation of NBC
4 marks for latest points
(atleast 8)

(iii) for each climate zone 1 mark
should be awarded (with explanation)
(max 5 zone)

Q.4 (i) for explanation 3 marks and
for diagram 2 marks should be
awarded

(ii) for diagram 1 marks and for
explanation 4 marks should be
awarded

(iii) 2 marks for explanation of earth
coupling

3 marks for 3 types of
coupling explanation (1 for each)

Q.5 (i) 2.5 marks for native landscaping definition
2.5 marks for double glazed window explanation

(ii) 2.5 marks for onsite source explanation
2.5 marks for sink explanation

(iii) for each step of solid waste management
provide 1 marks. (if explanation is correct)
(max 5 marks)

Q.6 (i) for correct and sequential steps
explanation ~~to~~ Provide full marks
(max 5 marks)

(ii) 2.5 marks for explanation of embodied energy.
2.5 marks for Transportation energy.

(iii) for correct and sequential steps explanation
provide full marks. (max 5 marks)

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Magam
18/12/23

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