

**M. ARCH. SEM-I (SUSTAINABLE ARCHITECTURE) (2014  
COURSE) (CBCS) : SUMMER - 2018  
SUBJECT : SUSTAINABLE MATERIALS & TECHNOLOGY**

Day : **Monday**  
Date : **07/05/2018**

Time : **02.00 PM To 04.00 PM**  
Max. Marks : **60**

**S-2018-3331**

**N.B.:**

- 1) Attempt **ANY THREE** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.

**SECTION – I**

- Q.1** Define the following terms: **[10]**
- a) Checklist of characteristics of sustainably managed materials
  - b) Stabilized compressed earth blocks
  - c) Embodied energy of materials
  - d) Renewable materials
  - e) insulation
- Q.2** Describe the following: **[10]**
- a) Life cycle cost analysis of materials
  - b) Explain in detail phases of LCA for building construction
- Q.3** Write short notes on: **[10]**
- a) Advantages of ferroement and AAC blocks over traditional materials
  - b) Glazing as a building material and energy efficient windows
- Q.4** Enumerate atleast five roofing systems and explain construction of sloping roof using RCB truss sections. **[10]**
- Q.5** Which is better, a recycled material or a natural material? Explain. Discuss the following materials in terms of their application in building: **[10]**  
Bamboo, reclaimed wood, insulation, low voc paints and vision glazing.

**P.T.O.**

## SECTION – II

- Q.6** Define the following terms: [10]
- Insulation
  - Precast RCC doors and windows
  - Reclaimed materials
  - Plastic in building construction
  - Environmental impact of materials
- Q.7** Write short notes on: [10]
- Bamboo and cork flooring
  - Brick dome construction without form work
- Q.8** Write short notes on: [10]
- System of construction and advantages of cob and adobe construction
  - Recycling of demolition waste
- Q.9** Describe various recommended sustainably managed alternatives for doors and windows in a building. How air leakage control is achieved in curtain system? [10]
- Q.10** Use the following product information, select between two alternative carpeting systems given a 10% interest rate and 16 years of life cycle study period. Neglect the effect of inflation of other costs and assume replacement costs equal to initial cost [10]

	Prima carpet	Z ton carpet
Initial cost	15 ₹/sqm.	12 ₹/sqm.
Maintenance (annual)	1.5 ₹/sqm.	2.5 ₹/sqm.
Useful life	10 years	10 years

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