

Navrachana University
School of Environmental Design and Architecture (SEDA)
End-Semester Examination May 2016
2nd Year B. Arch – 2nd Semester
EN202 – Environmental Science II (Sustainable Development)

Date: 8th May 2017
Time: 2 hours

Marks:50

Instructions:

- Write answer for each question on a New side of the A3 page.
 - Sketches to be provided, as and where necessary.
1. Draw the section of the university building in your chosen in your specific climatic zone. Show the strategy for the following,
 - a) Energy Generation
 - b) Induced and Controlled Ventilation
 - c) Wall section with material specifications
 - d) Ground Connect of your Building
 - e) Indirect Lighting / Daylighting

(15 Marks)
 2. Draw the details for improving the performance of a Windscoop. Explain the strategy of removal of Foul smell and addition of fragrance in a Windscoop.

(5 Marks)
 3. Explain with diagram the application of Thermal Mass and Insulation in a wall section for Warm Arid climatic zone verses Cold climate.

(5 Marks)
 4. Enlist two different methods of Energy Generation other than Solar PV. Provide appropriate diagrams to explain following,
 - a. Principles of Energy Conversion for the particular technology.
 - b. Design modifications to optimize the energy generation.

(10 Marks)
 5. With diagrams, explain the principle of thermal time-lag for thermal mass, insulation and earth coupled cooling/heating. Also suggest, which is more suitable for the cold dry climate of Ladakh.

(5 Marks)
 6. Name the 4 types of cooling techniques. Which kind of cooling would be the best suited for the climate

(05 Marks)
 7. Draw a typical Rain Water harvesting system.

(05 Marks)