

The Assam Royal Global University, Guwahati
Royal School of Architecture
B.Arch 3rd Semester
Semester End Examination, December 2018
Course Title : Climate Responsive Architecture
Course Code : ARC132C303

Time: 3 Hours

Maximum Marks: 50

Note: Attempt all questions as per instructions given.
The figures in the right-hand margin indicate marks.

Section – A

- Q.1. Attempt **all questions**-Maximum word limit 50) 2 x 8
- a. What do you understand by Climatology? 2
 - b. What is Sun Path Diagram? 2
 - c. Explain Absolute and Relative Humidity 2
 - d. What are the SI units of Humidity and Precipitation? 2
 - e. Explain Psychrometric Chart. 2
 - f. What is Solar Radiation? 2
 - g. What you mean by Venturi Effect? 2
 - h. Explain and sketch Egg-crate Devices? 2

Section – B

- Q.2. Attempt **any two** of the following: 4 x 2
- a. What are the various Elements of Climate and their units of measurement? Explain 4
 - b. What are the two atmospheric factors that dominantly influence Human Comfort? 4
 - c. Explain with sketches: Solar Azimuth angle and Solar Altitude angle 4
- Q.3. Attempt **any one** of the following 8 x 1
- a. How is Earth's Thermal Balance obtained? What are the three processes by which earth's surface releases heat? 8
 - a. What are the various local factors governing the Climate of a Zone? Elaborate & Explain 8
- Q.4. Attempt **any two** of the following: 4.5 x 2
- a. What is shadow angle? How many types of Shadow angle are there and how is it used in designing shading devices? 4.5
 - b. Give two methods of reducing Heat gain by building from the following: 4.5
 - i) Roof 4.5
 - ii) South Wall 4.5
 - b. What is Stack-effect? Explain the functions of Natural Ventilation 4.5

Q.5. Attempt any one of the following

9 x 1

- b. Explain the effect of Fenestration Pattern and configuration in Building design w.r.t. Hot & dry Climate or Composite Climate 9
- c. Explain the form and planning of a traditional shelter and Site in a Warm and Humid Climate 9