

**The Assam Royal Global University, Guwahati**

**Royal School of Architecture**

**Bachelor of Architecture, 3<sup>rd</sup> Semester**

**Semester End Examination, January 21-22**

**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.*

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**Section – A**

**Q.1. Attempt all questions.**(Maximum word limit 5

**8 x2=16**

- a. How would you justify the importance of “climate responsive” with respect to Architecture as a professional?
- b. What do you understand by the term “Passive design”.
- c. What are the major climatic zones of India?
- d. Why is “Thermal comfort” imperative in Climate Responsive Architecture?
- e. What is a Kata Thermometer? What is it used for?
- f. Illustrate Stack effect.
- g. Explain the role of Building envelope and orientation in designing a climate responsive Structure.
- h. Explain a few design strategies that can be employed for a site located in Assam.

**Section – B**

**Q.2. Attempt any two of the following:**

**4.5 x 2=9**

- a. Consider the site of design studio and draw sun path diagram.
- b. “A building located in Shimla (Himachal Pradesh) and Kerala should possibly have a sloping roof while a building located in Delhi can have a flat roof if we consider the climatic conditions of these locations” Explain why?
- c. List down the Passive design strategies for designing a climate responsive building.

Q.3. Attempt **any two** of the following

**4.5 x 2=9**

- a. "Softscape elements and natural features help creating micro climatic effect on site." Explain?
- b. Explain the role of Building fenestrations, projections, and passive cooling devices in climate responsive buildings?
- c. List down and explain the different elements of climate.

Q.4. Attempt **any two** of the following:

**4 x 2=8**

- a. How does vegetation and landscape elements help in climate control? Explain with sketches.
- b. What do you understand by thermal comfort? What are the three ways of body heat exchange explain through a sketch.
- c. What is bio climatic design?

Q.5. Attempt **any one** of the following

**8 x 1=8**

- a. Goa falls under what climatic zone? Explain the role of climatic design approaches in Site analysis for a site located in Goa.
  - b. What are the different world climatic zones and how do we categorize these climatic zones in India?
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