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**BACHELOR OF ARCHITECTURE**

**Term-End Examination**

**June, 2012**

**BAR-029 : ARCHITECTURAL SCIENCES AND SERVICES - I (CLIMATOLOGY)**

*Time : 3 hours*

*Maximum Marks : 70*

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*Note : Attempt five questions in all. Section-A is compulsory. Attempt any four questions from Section-B.*

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**SECTION - A**

**(Compulsory Question)**

1. Discuss briefly with notes and sketches *any four* of the following : 4x7½=30
- (a) Time Lag factor
  - (b) Sun Path diagrams
  - (c) North Lighting
  - (d) Dry Bulb and Wet Bulb Temperatures
  - (e) Day Light Factor
  - (f) Green Architecture

## SECTION - B

Attempt *any four* questions from this section.  
All questions carry *equal* marks

2. Full shading of a window 1m x 1m, is required by an appropriate shading device at 2 p.m. on 15<sup>th</sup> April. The window is on the South wall of a building located at a Latitude 30° N. The vertical and horizontal solar angles on South wall at 2 p.m. on 15<sup>th</sup> April are 75° (Vertical) and 50° (Horizontal). Design the shading device for full shadow. 10
  
3. (a) Discuss briefly the term "Indoor Thermal Comfort". 4  
(b) What passive strategies you would adopt while designing a residential building in a cold climate like Shimla for Indoor comfort conditions 6
  
4. Discuss briefly with notes and sketches how the climatic factors would influence the Design of office building located in hot and arid climatic zone in India. 10
  
5. Discuss briefly the process of heat transmission through the external envelope of the building. 10

6. Explain briefly with notes and sketches the process of cross ventilation in buildings (Assume any climatic zone in India). 10
7. (a) From the climatic point of view, discuss briefly the relevance of Glass high rise buildings of Warm Climatic Zones of India 5
- (b) Discuss briefly the Energy Efficiency of these buildings as compared to traditional buildings of the same Climatic Zone. 5
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