

00314

BACHELOR OF ARCHITECTURE

Term-End Examination

June, 2011

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

Time : 3 hours

Maximum Marks : 70

Note : (1) Attempt four questions in all. Section-A is compulsory.

(2) Attempt any three questions from Section-B.

SECTION - A

(Compulsory Question)

1. Discuss briefly with notes and sketches *any five* of the following : 5x5=25
- (a) Psychrometric charts.
 - (b) Time Lag Factor
 - (c) Thermal conductivity
 - (d) Effect of building (COLOURS) on Thermal radiation
 - (e) Urban Heat Island
 - (f) North lighting
 - (g) Mahoney tables
 - (h) Advantages of High ceilings for indoor comfort.

SECTION - B

Attempt *any three* questions from this section.

2. (a) Discuss briefly "SOLAR CHARTS". How is the information on these charts utilized by an Architect in the Design process of Buildings. 2x7½=15
- (b) Fig 1 (a and b) show solar charts of 0° and 44° N latitude respectively. Discuss briefly the solar movement pattern on these two locations.
3. (a) Discuss briefly the phenomenon of "GLOBAL WARMING". 2x7½=15
- (b) Discuss briefly the role of an Architect while designing buildings for ethical solutions to meet the challenges of Global Warming.
4. A number of "GLASS BUILDINGS" having large glass facades have come up in major metro cities. 15
- (a) From the climatic point of view, discuss whether such buildings are suitable for hot/warm climatic zones.
- (b) Elaborate with notes and sketches the various parameters for indoor comfort and energy efficiency of such buildings.
5. Discuss briefly the design and planning principles, materials and construction techniques adopted in the Traditional courtyard houses of Hot and Arid regions of India. 15

6. Discuss briefly the different types of shading devices. Explain with notes and relevant sketches their appropriate use at different orientations of a Building. 15

7. Discuss briefly CROSS VENTILATIONS in buildings. 15

Explain with notes and sketches the criteria of location and sizes of openings for good cross ventilation in Buildings for indoor comfort.

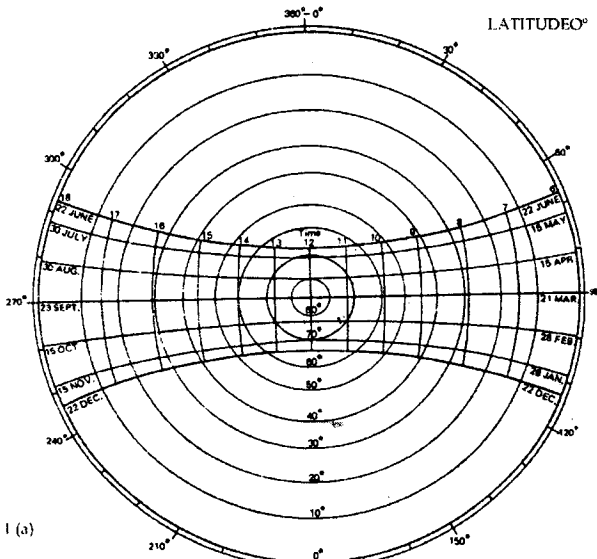


Fig 1 (a)

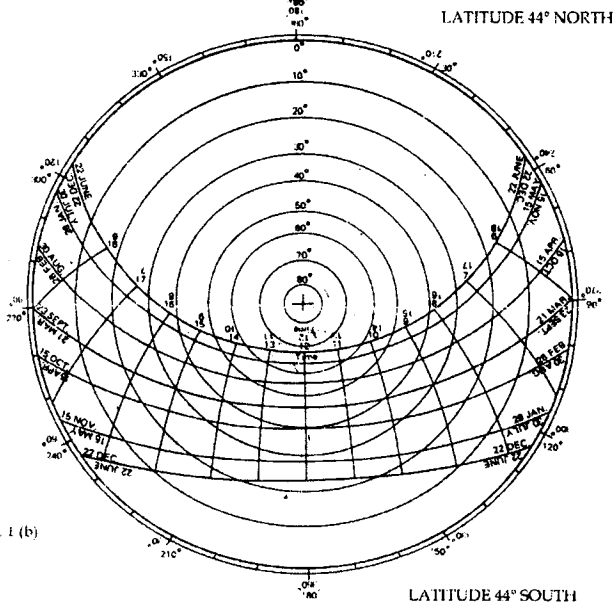


Fig 1 (b)

LATITUDE 44° SOUTH