

FIRST ARCH PART-II EXAMINATION, 2007
(2nd Semester)

CLIMATE AND ARCHITECTURE

Time : Three hours

Full Marks : 100
(50 marks for each part)

Use a separate Answer-Script for each part.

PART-I

*Answer any **two** questions.*

1. a) What are the environmental parameters on which human thermal comfort depends ? Elaborate each factor. 10
- b) What do you understand by "Tropical Summer Index" as laid down in the National Building Code of India 2005. Find the values of TSI for different environmental conditions as given below :

	Globe temp. (°C)	Wet bulb temp. (°C)	Wind speed (m/s)
i)	32	30	1
ii)	25	22	1
iii)	40	35	2

6+3×3=15

[Turn Over]

(2)

2. a) Draw an approximate Sun-Path diagram for latitude 30° N resampling a polar projected Sun-Path diagram. 10
- b) A building block of height 3 m and size 6 m \times 10 m is oriented North-South (longer side). On top of the block at the North-Eastern corner there is another square block of size 3 m \times 3 m having height 2 m from top of the first block. Sun rays are falling on the blocks having azimuth 30° South of West and altitude 45° . You are required to draw the shadow of the blocks on the roof of 1st block and also on the ground. 15
3. Write a note on the 'design guidelines for natural ventilation' as depicted in the "National Building Code of India, 2005" by wind action (only first 10 points). Explain the points with the help of sketches. $2.5 \times 10 = 25$

PART-II

*Answer Question No. 4 and any **one** from the rest.*

4. Discuss in brief all the meteorological elements which affects the shelter conditions of a living being. 20
5. Name two species from nature where you can find all precautionary measures have been taken by them to protect themselves from varying climatic conditions. Describe the shelters of the two species with detailed sketches with proper dimension. 30

(3)

6. With reference to your own house, try to explain how can you improve the indoor living environment redesigning the various architectural elements of the existing one considering all the environmental parameters with necessary drawings. (plans and sections) 30

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