

27.1.9
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B. Arch 3rd Semester Examination

Sub: Climatology

Sub. Code: AR 303

Full Marks 35

Time: 2 hrs.

1 mark reserved for neatness

First half

Answer any two questions

1. (a) What is the difference between dry bulb temperature and wet bulb temperature? 2
(b) What is the difference between absolute humidity and relative humidity? 2
(c) Define Monthly mean maximum and Monthly mean minimum DBT 2.5
(d) What is the use of Psychrometric chart? 2
2. (a) Indicate the external climatic/physical condition for following events: 4
(i) Conduction heat gain to human body
(ii) Convection heat gain to human body
(iii) Radiation heat loss from human body
(iv) Evaporation heat loss from human body

(b) What is the deep body temperature at the time of thermal balance? 1
(c) Explain with a sketch the heat exchange process in human body. 3.5
3. (a) What is the difference of heat flow rate and density of heat flow rate? 2
(b) What is corrected effective temperature (CET)? How CET value can be Calculated from ET Nomogram? 1+2
(c) Explain the utility of bio-climatic chart with a diagram 3.5

Second half

Answer any two questions

1. (a) Define periodic heat flow in a building. 2
(b) What do you mean by time lag and decrement factor in heat flow? 3
(c) What is the implication of thickness of a material on time lag and decrement factor? 3.5
2. (a) What do you mean by structural means of thermal control? 2.5
(b) Explain with sketch the performance of a heat absorbing glass in thermal control. 4
(c) What is the use of sunpath diagram in climatic design of a building? 2
3. (a) Explain with sketch the method of ventilation by stack effect. 4.5
(b) Explain with sketch the impact of position of opening on ventilation in a room? 4