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B.E (Full Time) End Semester DEGREE EXAMINATION, NOV / DEC 2011

Second Semester

Civil Engineering

PH 9161 PHYSICS FOR CIVIL ENGINEERING

(Regulation 2008)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Define thermal diffusivity.
2. What are the advantages of fenestrations in a building?
3. What is the role of refrigerant in refrigeration cycle?
4. What are the two categories of natural ventilation?
5. Distinguish between sound level meter and dosimeter?
6. Name two main types of glare.
7. What is meant by photopic vision and scotopic vision?
8. How will you classify composite materials?
9. What are seismic waves?
10. Where do earthquake occur?

Part – B (5 x 16 = 80 marks)

11. a) (i) Describe an experiment to determine the thermal conductivity of the material of the rubber tube using radial flow of heat? (12)
(ii) Steam at 100°C is passed through a rubber tube of 10 cm of which is immersed in a copper calorimeter of negligible thermal capacity containing 200 gm of water. The rate of rise of temperature per second is 0.02°C when it is at room temperature of 25°C. The external and internal diameter of the tube are 1.5 cm and 1 cm respectively. Calculate the thermal conductivity of rubber. (4)
12. a) Describe wind effect, stack effect or chimney effect in detail to control natural ventilation in multistoried building.
OR
b) Explain the four fundamental shading strategies followed in building design to control solar radiation.
13. a) Discuss the effect of window height on design of a day light factor in buildings.
OR
b) Discuss the effect of noise in high rise building and steps to be taken to control it.
14. a) What are earthquake hazards? Discuss the effect of ground shaking during earthquake?

OR

b) Explain the procedure to read seismogram? How will you estimate the magnitude of the earthquake?

15. a) What are the engineering applications of FRP composite?

OR

b) Discuss the various properties of metallic glasses?