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**B.E. / B.Tech. Degree End Semester Degree Examination, April/May 2011**

Second Semester

**PH 181 PHYSICS FOR CIVIL ENGINEERS**

(Regulation 2004)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

**PART-A (10 x 2 = 20 Marks)**

1. Mention two factors affecting the thermal performance of building.
2. What are the three ways of heat loss or heat gain through windows?
3. What is meant by saturation temperature?
4. What is meant by ventilation?
5. What is role of sound absorbers in a good acoustical building?
6. What do you mean by glare?
7. What is the role of matrix in FRP composites?
8. What are metallic glasses?
9. What is meant by seismology?
10. Mention the different types of seismic waves?

**Part - B (5 x 16 = 80 marks)**

11. (i) Find an expression to determine the thermal conduction through compound media, when bodies are in series and in parallel.  
(ii) The total area of glass window pane is  $0.6\text{m}^2$ . Calculate how much heat is conducted per minute through the glass window pane if thickness of glass is 10mm, the temperature of inside is  $30^\circ\text{C}$  and of the outside surface is  $4^\circ\text{C}$ . The thermal conductivity of glass is  $1.2\text{ W. m}^{-1}\text{ k}^{-1}$ .
12. a) Explain the functions of various components of Room AC and package AC with sectional elevation diagram.  
**OR**  
b) Describe the wind effect and stack effect responsible for pressure difference in a building.
13. a) Explain the construction and working of a sound level meter.  
**OR**  
b) Describe the different types of sound absorbers used in designing a building with good acoustical properties.
14. a) (i) Explain the techniques of reinforcing fibers in plastic.

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(ii) Write a short note on structural composites.

**OR**

- b) (i) What is meant by shape memory effect? And pseudo elasticity.  
(ii) Explain how shape memory alloys work with neat diagram of both microscopic and macroscopic views of the two phases of SMA's.

15. a) (i) How to locate epicenter and measure magnitude of earthquake?  
(ii) Explain the different earthquake Hazards?

**OR**

- b) Explain the hazards due to cyclone and flood. Also explain the preventive and safety measures to be taken to minimize damage.