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Question Paper Code : 60048

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2022.

Second Semester

PH 3201 — PHYSICS FOR CIVIL ENGINEERING

(Common to Civil Engineering)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define the term steady state of heat flow.
2. What is thermal performance of the building?
3. How is chilled water plant different from other systems?
4. Mention at least two precautions to prevent fire caused by AC systems.
5. What is a decibel?
6. What is daylight harvesting?
7. Distinguish between crystalline and non crystalline ceramics.
8. What is slip casting?
9. Give the significance of probabilistic seismic hazard analysis.
10. Illustrate the categories of cyclone based on wind speeds their capacity to cause damage.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss heat gain and heat loss estimation in the components of buildings.

Or

- (b) Write a brief note on indices of thermal comfort, climate and design of solar radiation.

12. (a) Explain in detail the design and the measurement for natural ventilation in a building.

Or

- (b) Discuss the air conditioning systems for different types of buildings and protection against fire caused by AC system.

13. (a) Describe the methods of sound absorption in buildings. Explain how will you estimate absorption coefficient of the hall.

Or

- (b) Write notes on
- (i) Visual field glare
 - (ii) Day light calculation
 - (iii) Day light factor.

14. (a) Discuss the classification of composites. Give detailed study of FRP and FRM.

Or

- (b) How are metallic glasses prepared? Explain how the melt spinner device can be used to produce metallic glasses. List the advantages of metallic glasses as transformer core materials.

15. (a) Explain in detail the seismic waves and write a brief note on seismology.

Or

- (b) Discuss in detail the cyclone and the flood hazards. What are the safety measures.