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Question Paper Code : 41110

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Second Semester

Civil Engineering

PH 8201 — PHYSICS FOR CIVIL ENGINEERING

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List out the benefits of thermal insulation.
2. State the principles of natural ventilation.
3. What is a decibel?
4. How is the noise produced in a building?
5. Define the term radiant Power.
6. What are the reducing factors of visibility?
7. What are composite materials?
8. List the uses of Fibre Reinforced Plastics (FRP)
9. Define epicentre in earthquake.
10. What is fire-proofing material? Give some examples.

PART B — (5 × 13 = 65 marks)

11. (a) Discuss the concept of chilled water plant and fan coil system with block diagram.

Or

- (b) Explain in detail air-conditioning system for different types of buildings and protection against fire caused by AC system.

12. (a) What is reverberation time? Derive Sabine's formula for the reverberation time of a Hall. Explain the growth and decay of sound energy.

Or

- (b) Explain the various methods of sound absorptions and absorbing materials in detail.
13. (a) Discuss the different spectral quantities and photometric quantities.

Or

- (b) Write a brief note on the day light design of windows and measurements in the buildings.
14. (a) Explain the following manufacturing methods of ceramics :
- (i) Slip casting
 - (ii) Isostatic pressing
 - (iii) Gas pressure bonding.

Or

- (b) Write note on :
- (i) Ferro electric ceramics
 - (ii) Ferro magnetic
 - (iii) High aluminium ceramics.
15. (a) Explain in detail the seismic waves and explain the principle and working of a seismograph.

Or

- (b) Explain in detail the fire safety regulations and fire fighting equipments.

PART C — (1 × 15 = 15 marks)

16. (a) Discuss in detail the factors affecting the thermal performance of Building.

Or

- (b) What are shape memory alloys? How are they prepared? Explain with neat diagram their characteristics. List out any four applications of shape memory alloys.