

19. Describe liquefaction of gases by a suitable method.

20. Derive Sabine's formula.

NOVEMBER/DECEMBER 2019

BAEL34 — BASIC PHYSICS I

Time : Three hours

Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is centripetal force?
2. What is radius of gyration?
3. Define Poisson's ratio.
4. Give the relation between the three elastic constants.
5. Define turbulent flow.
6. Define co-efficient of viscosity
7. Give the statement of second law of thermodynamics.
8. What is an irreversible process?



9. What is reverberation?

10. What is a ultrasonic wave?

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Derive an expression for moment of inertia of a solid sphere.

Or

(b) Derive an expression for the mass and mean density of earth.

12. (a) Derive an expression for torsion in a wire.

Or

(b) Explain the measurement of Young's modulus by uniform bending.

13. (a) Derive expression for the excess of pressure inside a soap bubble.

Or

(b) What are the qualities of a good lubricant?

14. (a) Describe critical constants.

Or

(b) Explain the production of low temperatures.

15. (a) Explain the measurement of AC frequency by Melde's string.

Or

(b) Explain the characters of good acoustics of buildings.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Derive an expression for acceleration of a body rolling down an inclined plane

17. Explain the determination of rigidity modulus by static torsion.

18. Explain determination of viscosity of highly viscous liquid by Stoke's method.

