

NOVEMBER/DECEMBER 2018

BAEL34 — BASIC PHYSICS – I

Time : Three hours

Maximum : 75 marks

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

Answer ALL questions.

1. What is Weightlessness?
2. What is radius of gyration?
3. Define Young's modulus.
4. What are the three elastic constants?
5. Define – Terminal velocity.
6. Define surface tension.
7. Give the statement of second law of thermodynamics.
8. What is a reversible process?
9. What is time of reverberation?
10. What is absorption coefficient?



SECTION B — ( $5 \times 5 = 25$  marks)

Answer ALL questions.

11. (a) Describe banking of curved tracks.  
Or  
(b) Derive an expression escape velocity.
12. (a) Derive an expression energy stored in a wire.  
Or  
(b) Explain the measurement of Young's modulus by uniform bending.
13. (a) Explain Stoke's law.  
Or  
(b) Explain the Lubrication.
14. (a) Describe Liquefaction of gases.  
Or  
(b) Explain Joule-Kelvin effect.
15. (a) Explain the measurement of AC frequency by Melde's string.  
Or  
(b) Explain the production and uses ultrasonic waves.

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

Answer any THREE questions.

16. Discuss variation of  $g$  with altitude, depth and latitude.
17. Explain the determination of rigidity modulus by static torsion.
18. Explain the determination of surface tension of a liquid by Jaegar's method.
19. Explain the determination of the thermal conductivity of a bad conductor by Lee's disc method.
20. Derive Sabine's formula.

