

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) State and explain Newton's laws.  
Or  
(b) Explain the work, power and energy.
17. (a) State and explain Pascal's law. Explain its applications.  
Or  
(b) State Bernoulli's theorem. Explain any two applications of Bernoulli's theorem.
18. (a) Explain the working of a diesel engine.  
Or  
(b) Explain recording and reproduction of sound in film.
19. (a) Explain double refraction.  
Or  
(b) Explain optical activity.
20. (a) State and explain ohm's law.  
Or  
(b) State and explain Kirchoff's laws.

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U.G. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2023.

Third Semester

Physics

Non Major Elective — BASIC PHYSICS — I

(For those who joined in July 2021 – 2022)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- The dimension for force is  
(a)  $MLT^{-2}$  (b)  $M^{-2}L^{-1}T^0$   
(c)  $ML^{-2}T$  (d)  $MT^{-2}$
- Ampere second is the unit of \_\_\_\_\_  
(a) Charge (b) Power  
(c) Conductance (d) Energy
- When the temperature of the liquid rises, its viscosity  
(a) Remains constant (b) Decreases  
(c) Increases (d) Zero



4. If the pressure is increased, the boiling point is  
 (a) Increased  
 (b) Decreased  
 (c) Remains Constant  
 (d) Nothing
5. Mercury thermometers can be used to measure temperature upto  
 (a) 100°C (b) 212°C  
 (c) 360°C (d) 500°C
6. In sound waves, the following phenomenon cannot be observed  
 (a) Refraction (b) Interference  
 (c) Diffraction (d) Polarisation
7. Angle of deviation is minimum for \_\_\_\_\_  
 (a) Violet (b) Red  
 (c) Yellow (d) Blue
8. The focal length of an objective of the microscope is \_\_\_\_\_  
 (a) Greater than the focal length of an eye piece  
 (b) Less than the focal length of an eye piece  
 (c) Equal to the focal length of an eyepiece  
 (d) Arbitrary
9. Electric field  $E =$  \_\_\_\_\_  
 (a)  $Fq^2$  (b)  $F/q$   
 (c)  $qF$  (d)  $q/E$

10. One mega ohm = \_\_\_\_\_ ohm  
 (a)  $10^7$  (b)  $10^6$   
 (c)  $10^5$  (d)  $10^4$

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) State Newton's law of motion.  
 Or  
 (b) Define and Prove the work-energy theorem.
12. (a) Explain the working of Pitot's tube.  
 Or  
 (b) State and explain Archimade's principle.
13. (a) Write a short note on clinical thermometer.  
 Or  
 (b) Compare noise and musical sounds.
14. (a) Define and explain interference.  
 Or  
 (b) Define and explain diffraction.
15. (a) State and explain ohm's law.  
 Or  
 (b) Observe an expression for the resistor when they are connected in parallel.

