ANNAI VIOLET ARTS AND SCIENCE COLLEGE
DEPARTMENT OF PHYSICS

CONTINUOUS INTERNAL ASSESSMENT – II (ODD SEM.)
SUBJECT : PROPERTIES OF MATTER AND SOUND

Class : I B.Sc Physics　　　　　　Date :

Max.Marks : 75　　　　　　Sub. Code: SR21A

PART A (10 × 2 = 20 Marks)
Answer any TEN questions

1. Define Stress.
2. Write a note on Hooke's law.
3. Define Poisson's ratio.
4. What is called Young's modulus?
5. Calculate the amount of work done in twisting a steel wire of radius 10^{-3} m and of length 0.25 m through an angle 45 degree. Given G for steel = $8 \times 10^{10}\ N\ m^{-2}$.
6. Define Torsional Pendulum.
7. Define Beam.
8. What is a Cantilever?
9. Write down the expression for Young's modulus by uniform bending method.
10. Define Surface tension.
11. Write down the expression for liquid drop and Soap bubble.
12. Write a note on Viscosity.

PART B – (5 × 5 = 25 Marks)
Answer any FIVE questions

13. Obtain the relation connecting E, G and K.
14. Derive the expression for torque per unit twist.
15. Obtain the expression for the depression of a load, loaded at the end of a cantilever.
16. Explain the experiment to determine the young's modulus of the material by uniform bending method and also determine the Young's modulus of the material of a rod for the same method using following data: M = 2.5 kg, a = 0.18 m, l = 0.6m, b = 0.025m, d =0.005 m, y = 0.007m.

17. Explain molecular forces with examples.
18. Explain the variation of surface tension with temperature.
19. Derive Poiseuille's formula formula for the rate of flow of a liquid through a capillary

PART C – (3 × 10 = 30 Marks)
Answer ANY THREE questions

20. Explain in detail about Stress – Strain diagram.
21. Explain dynamic torsion method to obtain Rigidity modulus of a wire and Moment of Inertia of a disc.
22. Describe König's method for the determination of Young's modulus of a beam.
23. Obtain the expression for excess pressure inside a curved liquid surface.
24. Describe Jaeger's method of studying the variation of Surface tension

Prepared by
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