B.Sc. DEGREE EXAMINATION,APRIL 2020
I Year I Semester
Properties of Matter

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. State Kepler's II law of motion.
2. What is meant by latitude?
3. Define Hooke's law.
4. Define Poission's ratio.
5. What is couple?
6. Define moment of inertia.
7. Give the unit and dimensions of surface tension.
8. Define surface energy.
9. Write any two applications of viscosity.
10. Write the dimensional formula for coefficient of viscosity.
11. What are the limiting values of poission's ratio?
12. What is Torsion pendulum?

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Obtain an expression for the gravitational field due to solid sphere.
14. Derive an expression for the bending moment of a beam.
15. Derive an expression for couple perunit twist of a cylinder.
16. Describe Jaegar's method to finding surface tension of a liquid.
17. Describe laboratory method for finding the coefficient of viscosity of a liquid.
18. Obtain an expression for poisson's ratio interms of elastic constants.
19. Explain the variation of surface Tension with temperature.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Describe briefly the determination of a Boy's method.
21. Describe with relevant theory, an experiment to determine the Young's modulus of the material by Koening's method.
22. Describe with necessary theory how the rigidity modulus of the wire and moment of inertia of the disc are determined experimentally using tersional pendulum.
23. Obtain the expressions for the excess of pressure over curved surfaces.
24. Derive an expression for the poiseuillse's formula.

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