

D. K. M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1
SEMESTER EXAMINATIONS
NOVEMBER - 2017
ALLIED : PHYSICS - I

15CAPH1A

Time : 3 Hours

Max. Marks : 75

SECTION – A (10 x 2 = 20)**Answer ALL the questions.**

1. What are elastic constants? Explain.
2. Define viscosity and give its unit and dimension.
3. Explain the Newton's law of cooling.
4. Give details of Lambda point.
5. Explain the time constants of Growth of LR circuits.
6. Give the construction and principle of potentiometer.
7. Give the laws of vibrations along a stretched string.
8. Write the four uses of ultrasonic waves.
9. Define interference of light.
10. What is optical activity? Explain.

SECTION – B (5 x 5 = 25)**Answer any FIVE of the following questions.**

11. Calculate the Depression at the loaded end of the cantilever.
12. Determine the coefficient of viscosity of a liquid by burette method.
13. Explain Callender Barne's Method to determine specific heat of a liquid.
14. Give properties and behaviour of Helium I and Helium II.
15. Give details of measurement of unknown resistance using potentiometer.
16. Calculate AC frequency using sonometer with a steel wire.
17. Give the conditions for the perfect acoustics.
18. Minimize the spherical aberration with two lenses in out of contact method.

SECTION – C (3 x 10 = 30)**Answer ALL the questions.**

19. (a) Determine the rigidity modulus of thin wire from the theory of torsional oscillation.
(Or)
(b) Give the theory of liquefaction of hydrogen from the H.K. Onne's method.
20. (a) Give the theory of growth and decay of current through L.R. circuit.
(Or)
(b) Determine the velocity and frequency of stretched string in transverse vibration.
21. (a) Describe the theory of air wedge and determine the diameter of thin wire.
(Or)
(b) Explain in detail about the production of sound waves by Piezo - electric method.