

--	--	--	--	--	--	--	--

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.



UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.

(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.Sc., CHEMISTRY

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
III	PART-III	ELECTIVE GENERIC	U21PH3A3	ALLIED PHYSICS - I

Date & Session: 25.04.2025/FN

Time: 3 hours

Maximum: 75 Marks

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer ALL Questions.
CO1	K1	1.	The S.I unit of modulus of elasticity is _____. a) Nm b) N/m ² c) Nm ² d) Nsm
CO1	K2	2.	Shearing strain is also known as _____. a) angle of shear b) angle of twist c) angle of strain d) angle of time
CO2	K1	3.	The work done in increasing the surface area of a liquid by unity is called as _____. a) pressure b) surface energy c) surface tension d) work done
CO2	K2	4.	The viscous drag in a liquid layer does not depend upon _____. a) area b) velocity c) velocity gradient d) nature of liquid
CO3	K1	5.	In Melde's string experiment, the frequency of the tuning fork in transverse mode _____. a) $\frac{1}{2l} \frac{\sqrt{T}}{\sqrt{m}}$ b) $\frac{1}{2} \frac{\sqrt{T}}{m}$ c) $\frac{1}{2l} \frac{T}{m}$ d) $\frac{1}{2l} \frac{T}{\sqrt{m}}$
CO3	K2	6.	In simple harmonic motion, if the displacement is maximum the velocity will be _____. a) minimum b) maximum c) zero d) infinity
CO4	K1	7.	Mean free path is inversely proportion to _____ of the gas. a) viscosity b) pressure c) volume d) absolute temperature
CO4	K2	8.	The unit of coefficient of thermal conductivity of a material(K) is _____. a) WmK ⁻¹ b) Wm ⁻¹ K c) Wm ⁻¹ K ⁻¹ d) WmK
CO5	K1	9.	Interference fringes are _____. a) equally spaced b) un equally spaced c) high spaced d) none
CO5	K2	10.	The bending of light over an obstacle is called _____. a) Interference b) diffraction c) polarisation d) reflection

Course Outcome	Bloom's K-level	Q. No.	<p align="center">SECTION – B (5 X 5 = 25 Marks) Answer ALL Questions choosing either (a) or (b)</p>
CO1	K3	11a.	Define Strain. Also classify the different types strain.
CO1	K3	11b.	(OR) Define (i) Young's modulus (q) (ii) Rigidity modulus (K).
CO2	K3	12a.	Explain the term Viscosity and also derive the expression of coefficient of viscosity of a liquid.
CO2	K3	12b.	(OR) Explain Surface tension on the basis of molecular theory.
CO3	K4	13a.	Show that for a particle executing simple harmonic motion, its velocity $v = \frac{dy}{dt} = \omega\sqrt{a^2 - y^2}$.
CO3	K4	13b.	(OR) Find the equation for the undamped free vibration.
CO4	K4	14a.	Illustrate the important features of blackbody spectrum.
CO4	K4	14b.	(OR) Explain the following (i) Conduction (ii) Convection (iii) Radiation.
CO5	K5	15a.	Distinguish between Interference and Diffraction.
CO5	K5	15b.	(OR) Describe the condition for interference.

Course Outcome	Bloom's K-level	Q. No	<p align="center">SECTION – C (5 X 8 = 40 Marks) Answer ALL Questions choosing either (a) or (b)</p>
CO1	K3	16a.	Determine the relation between q,n,K.
CO1	K3	16b.	(OR) How will you determine the rigidity modulus of the wire by using Torsion pendulum?
CO2	K4	17a.	Explain the experimental determination of viscosity of highly viscous liquid.
CO2	K4	17b.	(OR) Derive Poiseuille's formula for the rate of flow of the liquid in capillary tube.
CO3	K4	18a.	Calculate the resultant of two SHMs acting along the same direction.
CO3	K4	18b.	(OR) With a neat sketch, describe Melde's experiment to determine the frequency of an electrically maintained tuning fork in both the modes.
CO4	K5	19a.	Analyse the experimental verification of Newton's law of cooling.
CO4	K5	19b.	(OR) A liquid takes 5 minutes to cool from 80°C to 50°C. How much time will it take to cool from 60°C to 30°C. The temperature of the surrounding is 20°C.
CO5	K5	20a.	Discuss about the method of finding the thickness of the wire using air wedge arrangement.
CO5	K5	20b.	(OR) Discuss the theory of diffraction grating. Describe the experiment to determine the wavelength of mercury spectrum using it.