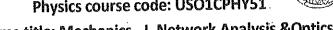
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SARDAR PATEL UNIVERSITY

B.Sc. Examination, Semester - I

Physics course code: USO1CPHY51





Course fifte: Mechanics - 1, Metwork Analysis Gobiles		
E ₁	[TOTAL MARKS 70]	
	Date: \$2/12/2022	
Instructions: 1. All symbols have their usual meaning		
2. figures at the right side of question indicates full marks.	. Time- 200 to 500 Am	
Q.1 Multiple choice question :-	[10]	
(1) The restoring force per unit area is known as		
(a) Elasticity (b) Plasticity (c) strain (d) stress		
(2) The ratio of lateral strain to longitudinal strain		
(a) Young's modulus (b) Poisson's ratio (c) Bulk Modulu	s (d) Modulus of rigidity	
(3) The unit of twisting couple		
(a) N/m ² (b) N.m (c) N ² .m (d) N.m ²		
(4) The speed of ultrasonic waves in solid medium depends on		
(a) Volume (b) Length (c) Density (d) Area	1	
(5) The time period of simple pendulum of infinite length is		
(a) Zero (b) One (c) Infinite (d) None of these		
(6) The compound pendulum is also known as pendulu	m.	
(a) simple (b) conical (c) Torsional (d) physical		
(7) Every junction is a		
(a) mesh (b) loop (c) node (d) branch		
(8) The Maxwell's bridge is used to measure the unknown	ation to seem	
(a) resistance (b) Capacitance (c) Inductance (d) Free	quency	
(9) The resolving power of prism is given by		

(b) $\frac{1.22\lambda}{2\sin t}$ (c) $t \frac{d\mu}{d\lambda}$ (d) nN (10) When light travels a distance d in the medium of refractive index μ, the optical path is ------

(a) $\frac{d}{\mu}$ (b) $\frac{\mu}{d}$ (c) μd (d) $\frac{1}{\mu d}$

Q. 2 Answer the following question in brief (Any ten)

- (1) Write and explain Hook's law.
- (2) Explain load and stress.
- (3) What is Cantilever?
- (4) Explain Ultrasonic waves
- (5) Write four uses of Ultrasonic waves.
- (6) What is simple pendulum?
- (7) Give the statement of Thevenin's Theorem.
- (8) Write the balance condition for an ac bridge.
- (9) Give the limitations of Maxwell's bridge.
- (10) What is refractometer?
- (11) What is diffraction? Give types of it.
- (12) Explain the resolution limit of the eye.

[20]