Government College for Women (A) Srikakulam
Department Of Physics
Subject:Physics C4:Waves & Oscillations Semester II MID 1
Time : 2h Max. Marks: 35 Date:01-03-2024

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I. **Answer any one of the following questions:** 1*8=8 marks

1a.Explain the construction and working og Piezo electric effect?

Or

b.Explain the Rigidity modulus of a given wire using Torsional Pendulum?

II. **Answer any three of the following questions:** 3X4 =12 marks

a.Write Four Ultrasonic Applications?

b.Write Sort note on Piezo electric crystals?

c.A particle executing SHM is represented by $y = 10\sin(10t - \Pi/6)$ meters then Calculate I]displacement ii]amplitude iii]angular frequency iv]phase and v]velocity.

d.Explain about the Ultra Sonic detection Methods

e.Write Short note on Experimental procedure of Compound pendulum

III. Answer all of the following questions: 5X2=10

a.Write SHM characteristics?

b.what is compound pendulum? And draw graph b/w l and T^2

c.Define SHM & write D.E of SHM?

d.Write Charactrestics of Ultrasonics?

e. Bats emits ultrasonic waves.The shortest wavelength in air by a bat is about 0.33cm.What is the highest frequency a bat can emit?

IV. Answer all the questions given below: 5X1=5

A. Ultrasound are waves having

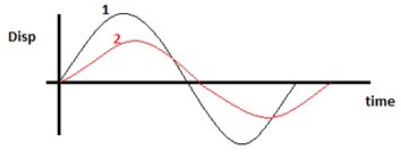
(a) high frequency b]high energy c]inaudibility to human ear d]all of these

B.Velocity of ultrasonic waves is constant for a _____ medium.

(a)mixture of only two b]insufficient information c]homogeneous d]heterogeneous

C. The displacement vs time graphs of 2 SHMs are given below. Which parameter is the same for both of them?

a) Angular frequency b) Amplitude c) Maximum speed d) Phase constant



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D.For a body moving with simple harmonic motion, the number of cycles per second, is known as its

A. Oscillation B. Amplitude C. Periodic time D. Frequency

E.Compound pendulum needs to be spherical in shape.

a) True b) False