



ST. JOSEPH'S COLLEGE, PRAYAGRAJ
SECOND UNIT TEST - 2023

Class-9

PHYSICS

Max. Mks: 30

(Max Time: 90 minutes)

*Answers to this Paper must be written on the paper provided separately.
You will not be allowed to write during the first 15 minutes. This time is to be spent
in reading the question paper.*

The time given at the head of this paper is the time allowed for writing the answers.

Attempt all questions

The intended marks for questions or parts of questions are given in brackets []

SECTION-A [1×6]

Question 1

- A. The temperature of water at the surface of the deep lake is 2°C the temperature expected at the bottom of the lake would be.
- (i) 0°C
 - (ii) 2°C
 - (iii) 4°C
 - (iv) None of these
- B. The average temperature of earth's surface would be in the absence of greenhouse effect.
- (i) -18°C
 - (ii) 32°C
 - (iii) Absolute zero temperature
 - (iv) None of these
- C. 1J equals to
- (i) 0.24 cal
 - (ii) 4.18 cal
 - (iii) 1 cal
 - (iv) None of these
- D. **Assertion:** The Flash of lightning is seen before the sound of thunder is heard.
Reason: Speed of sound is greater than speed of light.
- (i) Both assertion and reason are true and reason is the correct explanation of assertion.
 - (ii) Both assertion and reason are true but reason is not the correct explanation of assertion.
 - (iii) Assertion is true but reason is false.
 - (iv) Both Assertion and Reason are false
- E. Sound travels in the form of:
- (a) compression and rarefactions (b) crest (c) trough
- (i) Only a
 - (ii) Only b and c
 - (iii) All a, b and c
 - (iv) None of these

F. The sound heard by a train passing by is maximum during and minimum during.....

- (i) Winter , Summer
- (ii) Winter, Monsoon
- (iii) Summer, Winter
- (iv) None of these

SECTION-B [2×6]

Question 2 How will the speed of sound in a gas change if the pressure of gas is doubled?

Question 3 Draw a graph to show the variation of density of water with increase in temperature from $0^{\circ}C$ to $10^{\circ}C$.

Question 4 Explain the difference between ultrasonic and supersonic sound.

Question 5 How do fishes survive in ponds even when the atmospheric temperature is below $0^{\circ}C$.

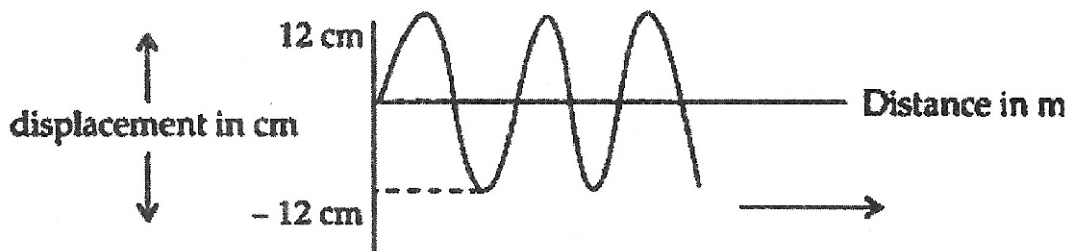
Question 6 The frequency of a source of sound is 50 Hz. How many times does it vibrate in a minute?

Question 7 What do you mean by absolute zero?

SECTION-C [3×4]

Question 8 Define the terms: (a) Wavelength, (b) time period and (c) amplitude of sound.

Question 9 The figure shows the snapshot of a sound certain instant



- (i) What is the amplitude of the wave?
- (ii) If the velocity of the wave is 4 m/s, calculate the wavelength of the wave if its frequency is 20 Hz.
- (iii) If a wave of same type but with higher frequency is passed in the given medium, will the speed of the wave increase, decrease or remain the same?

Question 10 Write three ways to minimize the effect of global warming.

Question 11 (i) Draw a diagram showing the temperature of various layers of water in an ice covered pond.
(ii) At what temperature Fahrenheit and Celsius values are same. Show it mathematically.

*****ALL THE BEST*****