CALIFORNIA PHYSICS · UNIT 4 · 25 QUESTIONS

Waves, Light, and Sound — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **An ocean wave has frequency 5 Hz and wavelength 4 m. Its speed is**



A 0.8 m/s

B 20 m/s

C 1.25 m/s

D 9 m/s

Understand It with Pulse | Flag a mistake

2 **A wave has period 0.25 s. Its frequency is**

- A 0.25 Hz
- B 25 Hz
- C 2.5 Hz
- D 4 Hz

Understand It with Pulse | Flag a mistake

3 **A wave travels at 300 m/s with frequency 60 Hz. Its wavelength is**

- A 0.2 m
- B 18000 m
- C 360 m
- D 5 m

Understand It with Pulse | Flag a mistake

4 **Sound travels at 340 m/s. An echo returns after 2 s from a cliff face. The distance to the cliff face is**



A 85 m

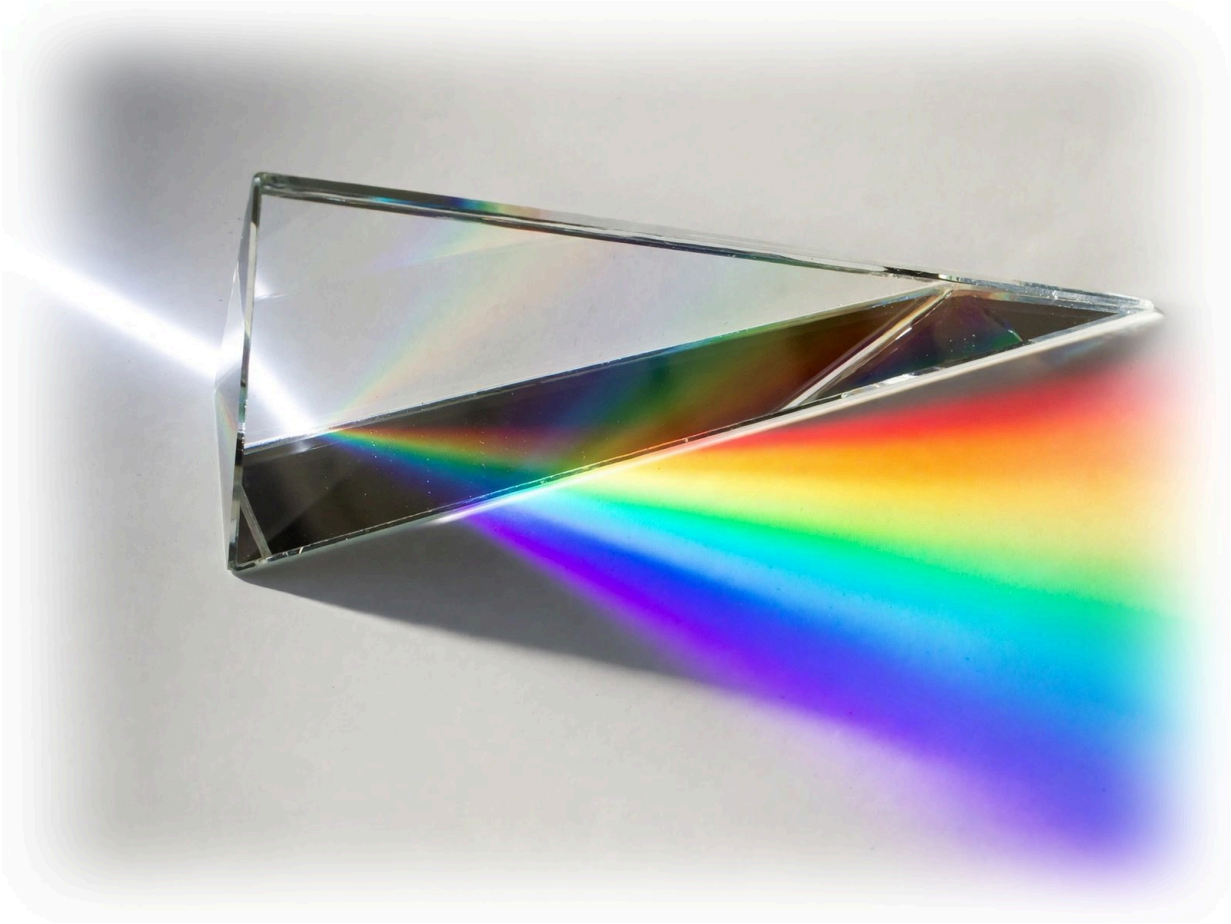
B 170 m

C 340 m

D 680 m

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5 **Light in air enters a glass prism and slows down. The ray bends**



A away from the normal

B not at all

C toward the normal

D back along its path

Understand It with Pulse | Flag a mistake

6 **When a ray bounces off a surface, the angle of incidence equals the angle of**

A dispersion

B reflection

C diffraction

D refraction

Understand It with Pulse | Flag a mistake

7 **A ray hits a mirror at 30 degrees to the normal. What is the angle between the incoming ray and the reflected ray?**

A 90 degrees

B 30 degrees

C 60 degrees

D 15 degrees

Understand It with Pulse | Flag a mistake

8 **Light with speed $3.0 \times 10^{8}\ \frac{m}{s}$ and frequency 6.0×10^{14} Hz has wavelength**

- **A** 2.0×10^{-7} m
- **B** 1.8×10^{23} m
- **C** 5.0×10^{-7} m
- **D** 5.0×10^{7} m

Understand It with Pulse | Flag a mistake

9 **Increasing frequency at fixed wave speed will**

- **A** increase wavelength
- **B** stop the wave
- **C** decrease wavelength
- **D** leave wavelength unchanged

Understand It with Pulse | Flag a mistake

10 **Sound is a**

A longitudinal wave needing a medium

B standing wave only

C transverse wave needing no medium

D transverse wave in a vacuum

Understand It with Pulse | Flag a mistake

11 **Light can travel through a**

A liquid only

B medium only

C vacuum

D solid only

Understand It with Pulse | Flag a mistake

12 **An ambulance with its siren sounding drives toward an observer and makes the observed frequency**



A higher

B zero

C lower

D unchanged

Understand It with Pulse | Flag a mistake

13 **The bending of waves around an obstacle is called**

A refraction

B diffraction

C interference

D reflection

Understand It with Pulse | Flag a mistake

14 **Two waves meet crest to crest. The result is**

A destructive interference

B constructive interference

C no wave

D reflection

Understand It with Pulse | Flag a mistake

15 **The number of complete waves passing a point per second is the**

A amplitude

B frequency

C wavelength

D period

Understand It with Pulse | Flag a mistake

16 **In the electromagnetic spectrum, visible light has a longer wavelength than**

A ultraviolet light

B infrared

C radio waves

D microwaves

Understand It with Pulse | Flag a mistake

17 **A magnifying glass, which is a convex lens, can form a real image when the object is beyond the**



A optical center only

B lens surface

C image point

D focal point

Understand It with Pulse | Flag a mistake

18 **A wave has frequency 10 Hz and wavelength 3 m. Its speed, in meters per second, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **A wave has period 0.5 s. Its frequency, in hertz, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **A wave travels at 200 m/s with frequency 50 Hz. Its wavelength, in meters, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **Sound at 340 m/s takes 3 s for a round trip. The distance to the surface, in meters, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **A ray hits a mirror at 40 degrees to the normal. The angle of reflection, in degrees, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **Louder sound generally means larger**

A wavelength

B frequency

C speed

D amplitude

Understand It with Pulse | Flag a mistake

24 **Higher pitch on a piano generally means higher**



A frequency

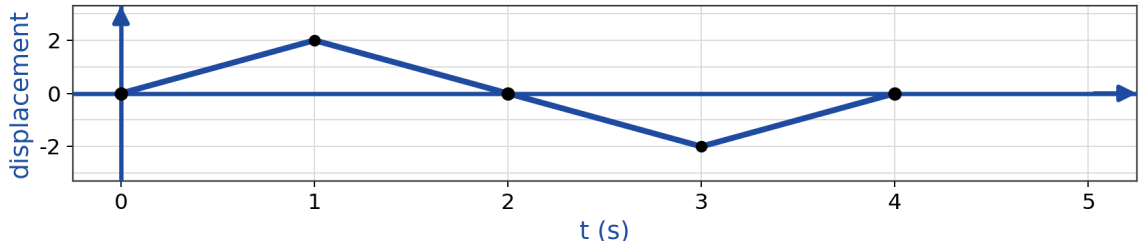
B speed

C wavelength

D amplitude

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25 **The graph shows displacement against time for a wave point. The period shown is**



A 4 s

B 2 s

C 8 s

D 1 s

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	B	**10.**	A	**19.**	2
2.	D	**11.**	C	**20.**	4
3.	D	**12.**	A	**21.**	510
4.	C	**13.**	B	**22.**	40
5.	C	**14.**	B	**23.**	D
6.	B	**15.**	B	**24.**	A
7.	C	**16.**	A	**25.**	A
8.	C	**17.**	D		
9.	C	**18.**	30		

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