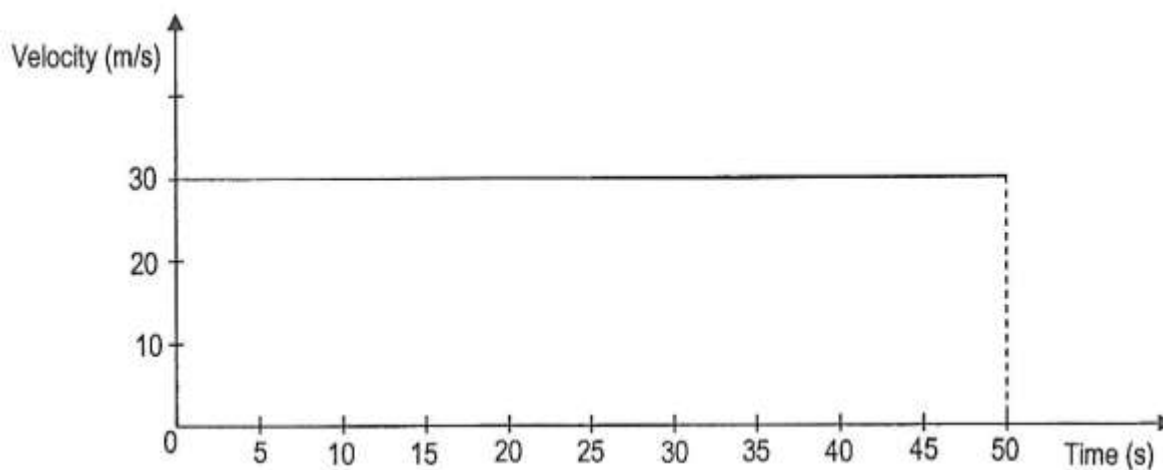


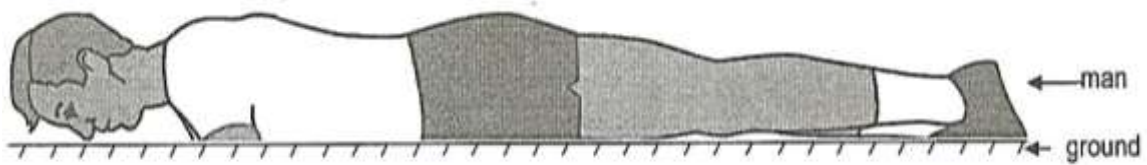
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1. Which of the following is not an S.I unit?
 - A. m/s
 - B. N
 - C. °C
 - D. W
2. The diagram below shows a velocity-time graph for a man who moves from village X to village Y on a bicycle.



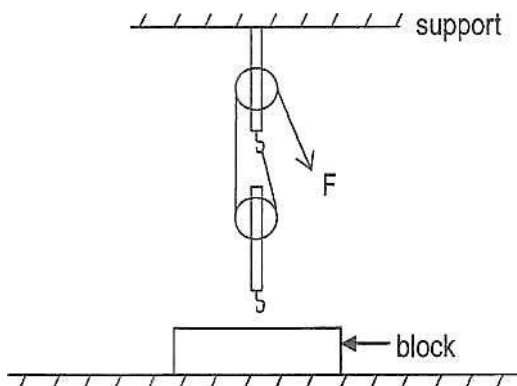
- Which of the following is true? The ...
- A. distance moved by the man in 50s is 30m.
 - B. acceleration of the man in 50s is 0m/s^2 .
 - C. acceleration of the man in 50s is 1500m/s^2 .
 - D. final velocity of the man after 50s is 1500m/s .
3. What is the weight of a 500g mass on the moon where gravitational field strength is 1.6N/kg ?
 - A. 0.8N
 - B. 8N
 - C. 312.5N
 - D. 800N

4. A man of mass 80kg lies on the ground as shown below.



Assuming the acceleration of free-fall, $g = 10\text{m/s}^2$, the gravitational potential energy of the man is...

- A. 0J
 - B. 8J
 - C. 88J
 - D. 800J
5. A stone of mass 24g and density 2.5g/cm^3 is split into two pieces of mass 18g and 6g respectively. What is the density of the smaller piece?
- A. 0.8g/cm^3
 - B. 1.3g/cm^3
 - C. 2.5g/cm^3
 - D. 4.0g/cm^3
6. The diagram shows a pulley system being used to lift a block from the ground.



What is the velocity ratio of the pulley system?

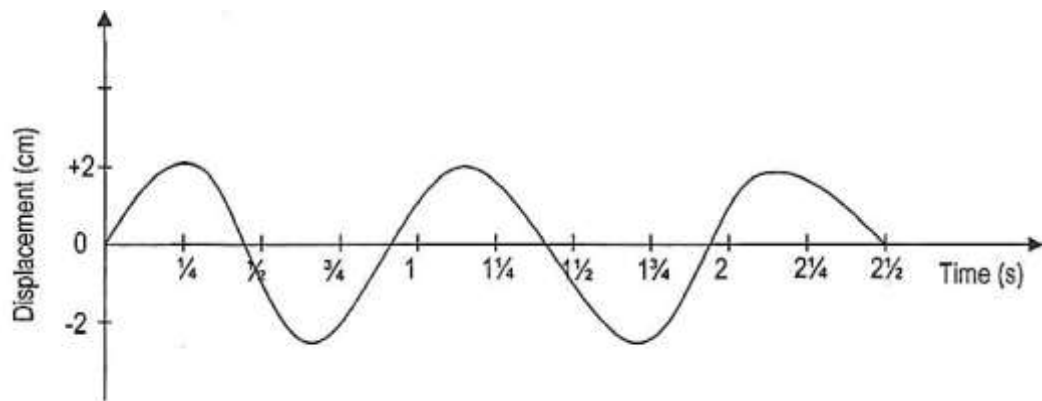
- A. 0
 - B. 1
 - C. 2
 - D. 3
7. Which substance does not contract if cooled from 2°C to 0°C ?

- A. Pure oil
- B. Pure water
- C. Brass
- D. Gold

8. What happens when a liquid is being heated at its boiling point? The...

- A. molecules become bigger.
- B. intermolecular spaces increase.
- C. intermolecular spaces decrease.
- D. number of molecules increases.

9. The diagram shows a displacement-time graph for a transverse wave.



How long does it take to make 2.5 waves?

- A. $3/4s$
- B. $1 \frac{1}{2} s$
- C. $2 \frac{1}{4} s$
- D. $2 \frac{1}{2} s$

10. Which statement about refraction is true? When light passes from air to glass, it...

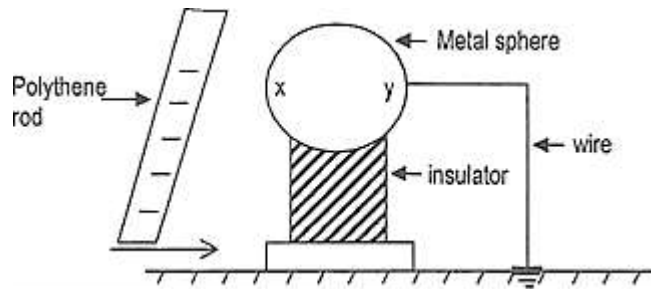
- A. speeds up and wavelength decreases.
- B. slows down and wavelength decreases.
- C. speeds up and the frequency decreases.
- D. slows down and the frequency decreases.

11. In order to produce a sound wave, there should always be •••

- A. a drum.

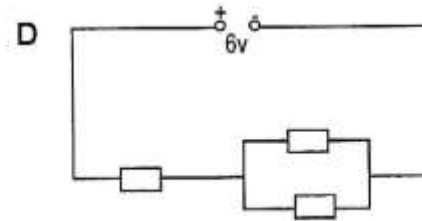
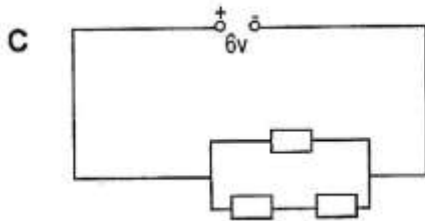
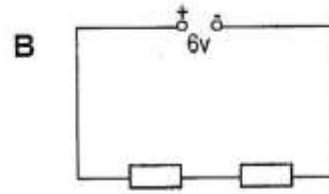
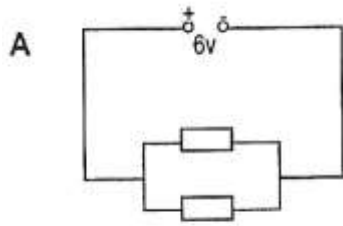
- B. vibrations.
- C. longitudinal waves.
- D. air.

12. The figure shows a negatively charged polythene rod moving closer to a metal sphere, which is on an insulator. There's a wire from the sphere to the ground.



Which of the following is true?

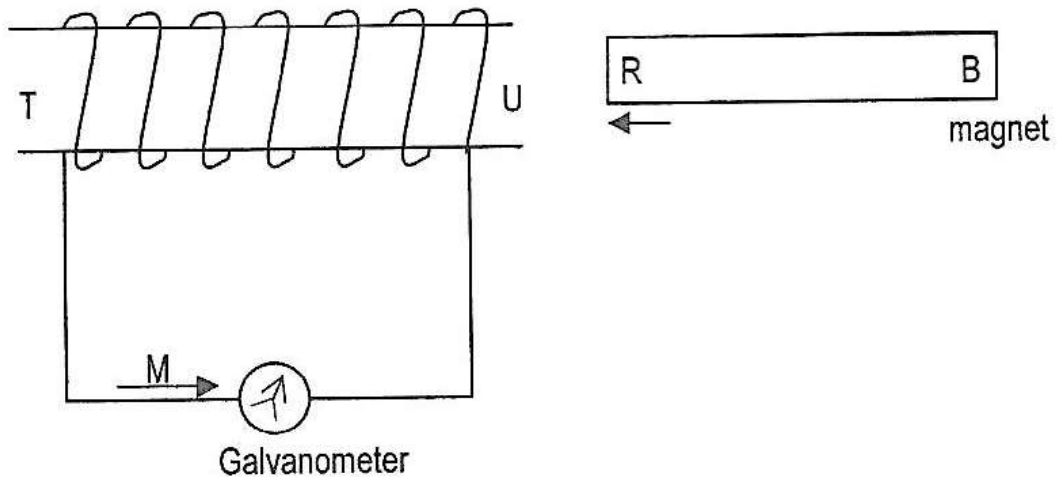
- A. Side 'x' of the sphere is charged negatively.
 - B. Side 'x' of the sphere receives protons from side'y'.
 - C. Conventional current flows to the sphere.
 - D. Side 'y' of the sphere receives protons from side 'x'.
13. Which of the following quantities is expressed in the same unit as potential difference?
- A. Positive charge
 - B. Electromotive force
 - C. Electric current
 - D. Electric power
14. Which of the following circuits containing identical resistors will give the highest current?



15. The formulae used to find electrical power is ...

- A. $P = IV$
- B. $P = VR$
- C. $P = VQ$
- D. $P = Wt$

16. The diagram shows a magnet moving into a solenoid.



Which of the following is true?

- A. If 'R' is a south pole, the induced current flows in the direction shown by arrow
- B. If 'R' is a north pole, the induced current flows in the direction shown by arrow
- C. If 'B' is a south pole, the induced current on face T of the solenoid flows clockwise.
- D. If 'B' is a north pole no current is induced in the solenoid.

17. A transformer is used to convert 240V to 12V in order to power a table lamp. If the current in the primary

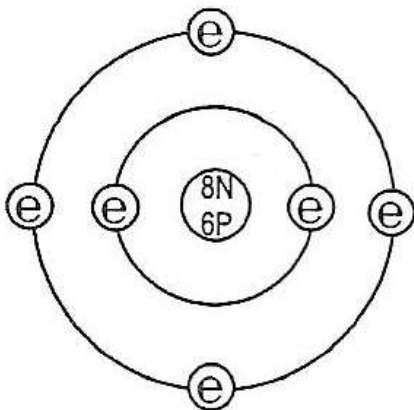
coil is 0.2A, what is the current in the secondary coil? (Assume that the transformer is **ideal**)

- A. 0.01A
- B. 0.10A
- C. 0.20A
- D. 4.00A

18. Which part of the Cathode Ray Oscilloscope helps the emitted electrons to come together to form a fine beam?

- A. Control grid
- B. Cathode
- C. Anode
- D. X-plates

19. The diagram shows the structure of an atom of carbon



Key

⊖ = electron

n = neutron

p = proton

20. A radioactive substance has a mass of 100g and a half-life of 2 minutes. How much of this substance remains undecayed after 6 minutes?

- A. 12.5g
- B. 25g
- C. 50g
- D. 75.5g