



Physics

Second Secondary Grade

20
26

Home Work

Week

4

Name:

Class:

School:

إعداد

عبد الله مصطفى

مراجعة

محمد عنتر

مكتب مستشار العلوم

عبد الله مصطفى - سعيد محمد

إشراف

د/ عزيزة رجب خليفة
مستشار العلوم

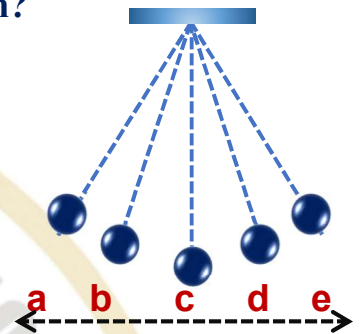
إشراف عام

د/ هالة عبد السلام
رئيس الإدارة المركزية للتعليم العام

First: Multiple Choice Questions

1) The opposite figure illustrates a simple pendulum. Which of the following pairs of points represents a distance equal to the amplitude of vibration?

- (A) a , e
- (B) b , e
- (C) a , d
- (D) c , a



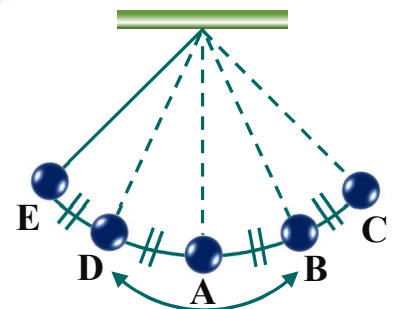
2) The opposite figure shows one arm of a tuning fork. Which of the following represents one complete vibration?

- (A) $A \rightarrow C \rightarrow B$
- (B) $A \rightarrow C \rightarrow A$
- (C) $B \rightarrow C \rightarrow B$
- (D) $B \rightarrow C \rightarrow A$

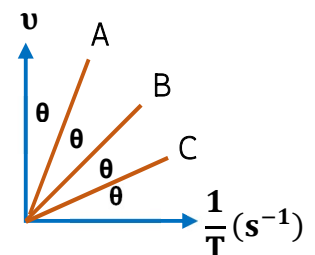


3) A simple pendulum oscillates between points A, B, C, D, and E as shown in the figure. The ratio of the time taken for displacement $\overrightarrow{AD}$ to the time taken for displacement $\overrightarrow{AB}$ equals ...

- (A) $1/2$
- (B) $1/4$
- (C) $1/3$
- (D) $1/1$

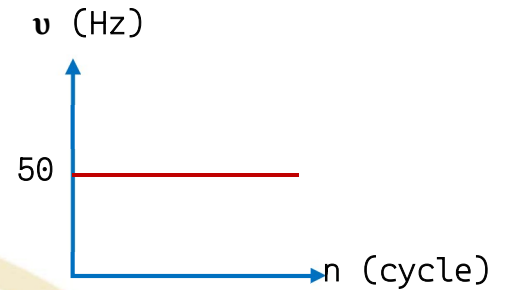


- 4) The maximum displacement of a vibrating string takes **0.002 s**, so the frequency equals ... Hz
- (A) 250 (B) 125
(C) 500 (D) 1000
-
- 5) If the number of complete vibrations made by a vibrating body is **1800 vibrations** per minute, then the frequency equals
- (A) 0.6 Hz (B) 1.5 Hz
(C) 30 Hz (D) 90 Hz
-
- 6) A vibrating body has a frequency equal to **9 times** its time period, so the periodic time equals s
- (A) 1/3
(B) 1/9
(C) 1/81
(D) 1
-
- 7) Three students **A**, **B**, and **C** drew graphs representing the relationship between the reciprocal of the time period and the frequency. If all the angles are equal, the correct evaluation of the students' graphs is:
- (A) Student A is correct, and students B and C are incorrect
(B) Student B is correct, and students A and C are incorrect
(C) Student C is correct, and students A and B are incorrect
(D) Students A and B are incorrect, and student C is incorrect



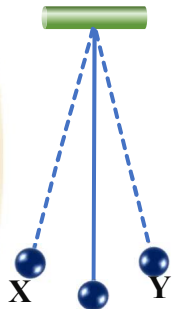
8) The opposite graph shows the relationship between the number of vibrations of a vibrating body and its frequency. The periodic time equals

- (A) 50 s
- (B) 0.2 s
- (C) 0.02 s
- (D) 0.002 s

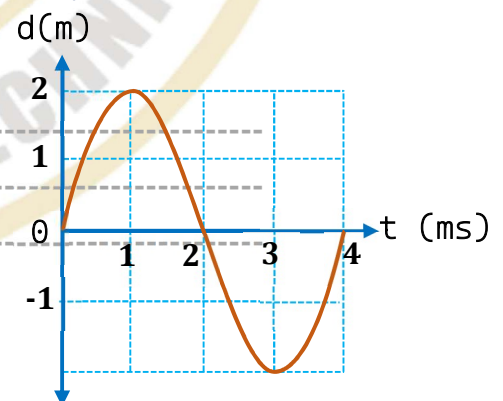


Second: Essay Questions

9) In the opposite figure, if the pendulum moves from point X to point Y in a time interval of 0.1 s, calculate the frequency of this pendulum.



1) The opposite graph illustrates the motion of a vibrating body. Calculate the frequency of this body



- The end -



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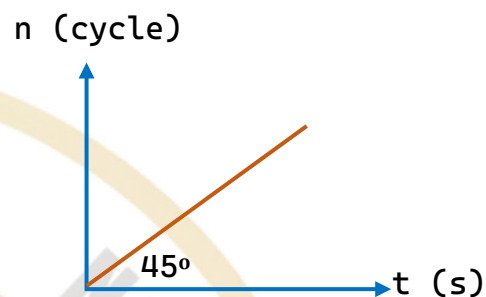
إشراف عام

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First: Multiple Choice

1) From the opposite graph, the frequency equals

- (A) Half the periodic time
- (B) The periodic time
- (C) Twice the periodic time
- (D) The time of amplitude

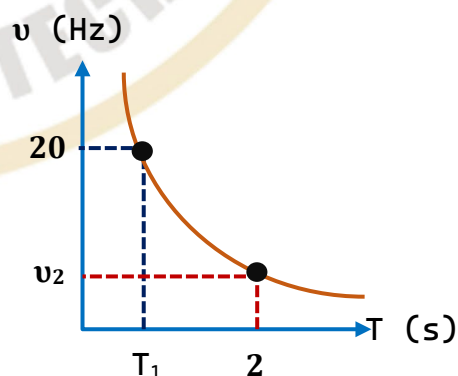


2) When a vibrating body is at its maximum displacement from its equilibrium position, which of the following becomes **zero**?

- (A) Its velocity and kinetic energy
- (B) Its velocity and potential energy
- (C) Its potential energy and kinetic energy
- (D) Its velocity and mechanical energy

3) The opposite graph illustrates the relationship between the time period and the frequency of a vibrating body. Calculate:

	ν_2	T_1
(A)	0.5 Hz	0.05 s
(B)	0.05 Hz	0.05 s
(C)	0.05 Hz	0.5 s
(D)	0.5 Hz	0.5 s



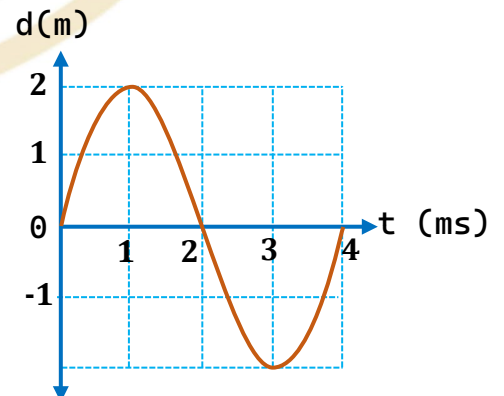
Second: Essay

- 4) A washing machine rotates at a rate of **1200 revolutions** per minute (rpm). Calculate the rotational frequency in hertz (Hz).

Group (B)

First: Multiple Choice

- 1) The time of amplitude of a vibrating body is **4 ms**, so the frequency equals
- (A) 250 Hz
(B) 62.5 Hz
(C) 0.004 Hz
(D) 0.016 Hz
- 2) The opposite graph illustrates the motion of a vibrating body. The frequency of this body equals
- (A) 250 Hz
(B) 0.25 Hz
(C) 4×10^{-3} Hz
(D) 4 Hz





3) When a vibrating body is at its maximum displacement from its equilibrium position, which of the following becomes **zero**?

- (A) Its velocity and kinetic energy
- (B) Its velocity and potential energy
- (C) Its potential energy and kinetic energy
- (D) Its velocity and mechanical energy

Second: Essay

4) A vibrating source produces **600 complete vibrations** per minute. Calculate the ratio of its frequency to its periodic time.

Group (C)

First: Multiple Choice

1) If the time taken by a vibrating body to perform one complete vibration is **0.1 s**, then the number of complete vibrations produced by this body during a time interval of **4.5 s** equals vibrations.

- (A) 4.5
- (B) 45
- (C) 0.45
- (D) 1/45

2) The ratio between the time of amplitude of a vibrating body and the time of one complete oscillation equals

- (A) 2/1
- (B) 1/2
- (C) 4/1
- (D) 1/4

3) If the number of vibrations of a tuning fork increases, so the frequency

- (A) Increases
- (B) Decreases
- (C) Does not change
- (D) Becomes zero

Second: Essay

4) If the time of amplitude of a vibrating source is **0.02 s**, calculate its frequency.

- The end -