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تاريخ إضافة الملف على موقع المناهج: 2025-02-21 23:06:54

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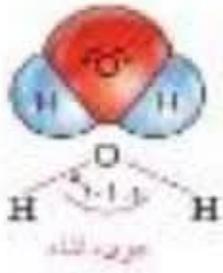
المزيد من مادة  
كيمياء:

## التواصل الاجتماعي بحسب الصف الثاني الإعدادي



صفحة المناهج  
المصرية على  
فيسبوك

المزيد من الملفات بحسب الصف الثاني الإعدادي والمادة كيمياء في الفصل الثاني



**Subject: Science**

**Grade: Second Preparatory**

**Lesson: Oscillatory Motion**

## Classroom questions

**Choose the correct answer:**

1- The frequency of oscillating body makes 600 complete oscillations in half minute is.....HZ **Frequency = no of C.O. \time(sec)**

(60 – 20 – 200 – 6000)

2- The result of multiplying the frequency and the periodic time .....one

(equal – greater than – less than – not equal)

3- All the following are oscillatory motion **except** .....

(Simple pendulum – tuning fork – spiral wire – The rotary bee)

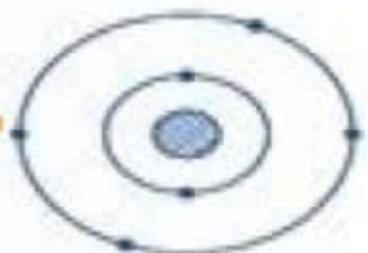
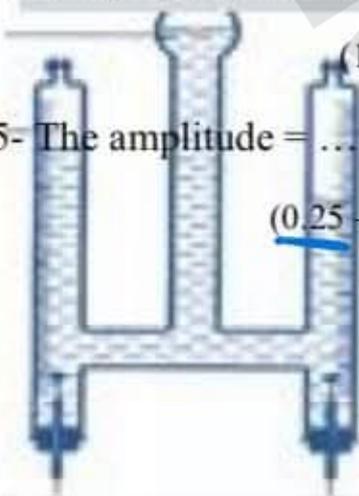
4- The periodic time of oscillating body its frequency 1000 HZ is.....sec

(1 – 100 – 0.100 – 0.001)

$$T = 1/F$$

5- The amplitude = ..... of the complete oscillation

(0.25 – 0.2 – 4 – 0.75)





**Write the scientific term:**

# Oscillatory motion

- 1- The motion of the oscillating body on both sides of its rest position.
- 2- The maximum displacement of the oscillating body away from its rest position.

## Amplitude

- 3- The motion the oscillating body as it passes with a fixed point two successive times in the same direction.

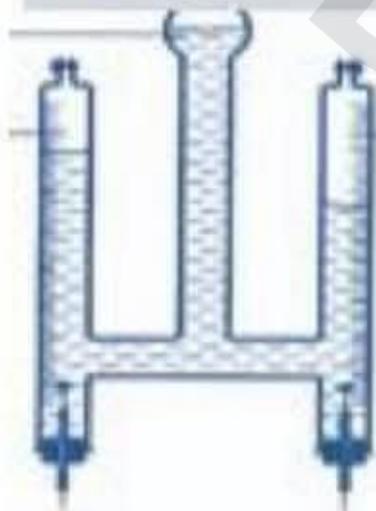
## Complete oscillation

- 4- Time taken by the oscillating body to make one complete oscillation.

## Periodic time

- 5- The number of complete oscillation in one second.

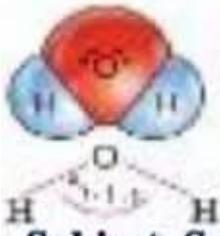
## Frequency



**Bioneer**

Dr/ Engy Nabil





Subject: Science



**Bioneer**  
Dr/ Engy Nabil



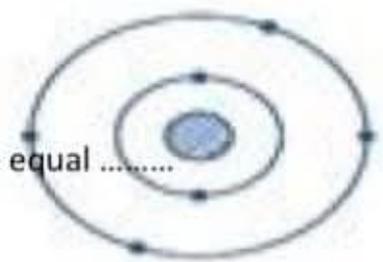
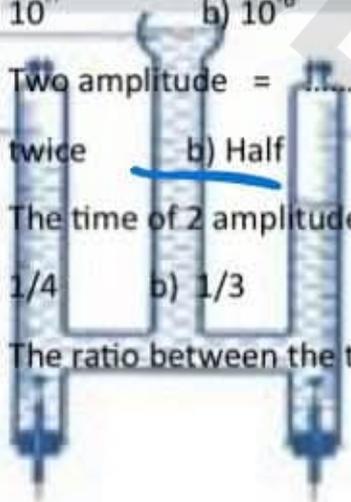
Grade: Second Preparatory

Lesson: Oscillatory motion

### Homework

Choose the correct answer:

- The product of frequency and periodic time = .....  
a) 0      b) 1      c) 2      d) 1/4
- As the speed of a simple pendulum increases, its kinetic energy .....  
a) decreases      b) increases      c) doesn't change
- The periodic time for a tuning fork makes (180) oscillations in a half minute is .....Sec.  
a) 6      b) 1/6      c) 600      d) 60
- If the amplitude of a vibrating string is 2cm so its complete oscillation = ..... m  
a) 8      b) 0.08      c) 0.008      d) 0.04
- A vibrating spring makes an amplitude of ( 0.1 m ) during one second so its periodic time = ..... ( 4 / 0.25 / 40 / 0.4 ) second while its complete oscillation = ( 40 / 50 / 60 / 4 ) cm  
b) 0.25
- one Kilohertz = ..... Megahertz .  
a)  $10^{-7}$       b)  $10^{-6}$       c)  $10^{+6}$       d)  $10^{-3}$
- Two amplitude = ..... Complete Oscillation.  
a) twice      b) Half      c) Quarter      d) 4 Times
- The time of 2 amplitudes = ..... periodic time.  
a) 1/4      b) 1/3      c) 1/2      d) 2
- The ratio between the time of amplitude to the periodic time equal .....





- a) 2:1    b) 1:4    c) 4:1    d) 1:2



10) All the following are units of measuring Frequency except .....

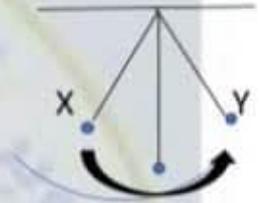
- a) Hz    b) Hz<sup>-1</sup>    c) Oscillation . Sec<sup>-1</sup>    d) cycle/sec

11) If the Frequency of an Oscillating body is (10 Hz) so, it makes ..... Complete Oscillation

In one minute.

- a) 300    b) 60    c) 600    d) 1000

12) From the figure , when the ball moves from (X to Y)



In ( 0.02 sec ) ,the frequency = .....Hz.

- a) 0.02    b) 50    c) 25    d) 0.04

13) The periodic time of a tuning fork makes 240 wave in one minute = ..... second .

- a) one    b) 4    c) 1/2    d) 1/4

14) The Complete Oscillation include .....successive displacement, each of them called .....

- a) two , amplitude    b) four , periodic time    c) four , amplitude    d) two , Oscillation

15) If the periodic time of a body (X) is double that of a body (Y) so the ratio between the frequency (Y) to the frequency (X) is .....

- a) 2:1    b) 1:1    c) 1:2    d) 1:4



**Write the scientific term**

1- The motion which is repeated regularly in equal periods of time. **Periodic motion**

2- The periodic motion made by the oscillating body around its rest point where the motion is repeated in equal intervals of time. **Oscillatory motion**

3- The time taken by the oscillating body to make one complete oscillation.

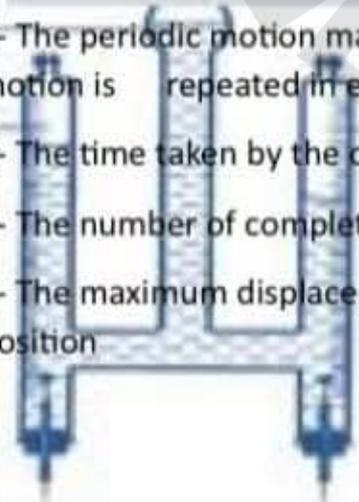
**Periodic time**

4- The number of complete oscillations made by the oscillating body in one second.

**Frequency**

5- The maximum displacement made by the oscillating body away from its rest position

**Amplitude**





**Give reason**

**Because at max displacement its speed reaches zero**

- 1- The kinetic energy of the oscillating body at the maximum displacement = 0
- 2- The motion of rotary bee is not an oscillatory motion.
- 3-when the periodic time of the oscillating body increases its frequency decreases

**Because it is not repeated at the two sides of rest point**

**What is meant by**

**Because periodic time and frequency are inversely proportional**

1-A tuning fork has a frequency of 212 Hz.

**This means number of complete oscillations made in one second is 212 oscillations**

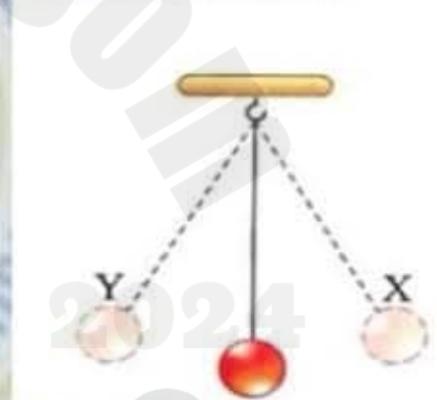
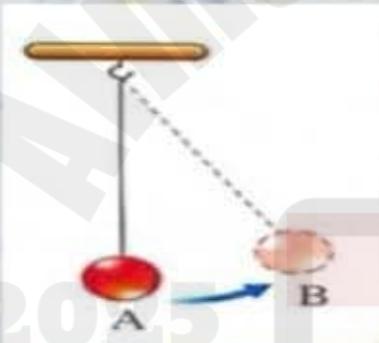
2-A body makes 360 Oscillations in one minute.

**This means its frequency is**

**Study the following figures then:**

**6 hz ( 6 oscillation /sec)**

**Find the Periodic time and Frequency?**



1) (A)to (B) in duration of 0.25 seconds.

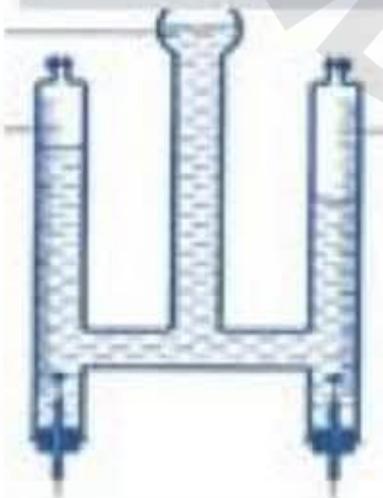
**$T = 0.25 \times 4 = 1 \text{ sec}$**

**$F = 1 \text{ Hz}$**

2) (X) to (Y) in duration of 0.02 seconds.

**$T=0.02 \times 2= 0.04 \text{ sec}$**

**$F= 1/0.04= 25 \text{ Hz}$**



**Bio neer**  
Dr/ Engy Nabil





**Subject: Science**

**Grade: Second Preparatory**

**Lesson: Oscillatory Motion**



## Week test Questions

**Define:**

1- Periodic motion

**It is the motion which is regularly repeated in equal time intervals**

2- Oscillatory motion

**It is a periodic motion in which oscillating body moves around its rest position**

3- Simple harmonic motion

4- Amplitude **It is the maximum displacement done by the oscillating body away from rest position**

5- Complete oscillation

**It is the motion of oscillating body when it passes by a fixed point two successive times in the same direction**

6- Periodic time

**Time taken to make one complete oscillation**

7- Frequency

**Number of complete oscillation in one second**

**Give reason of the following sentences:**

**because it is the motion which is regularly repeated in equal time intervals**

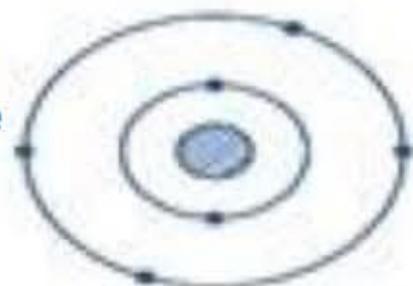
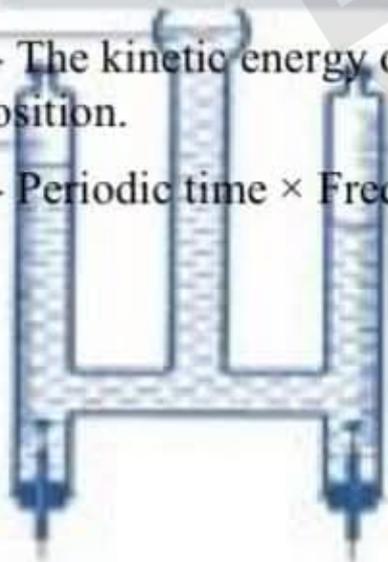
1- The oscillatory motion is considered as a periodic motion.

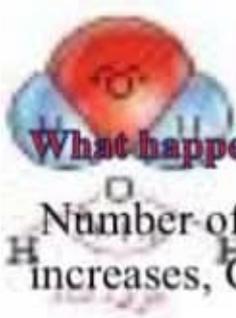
2- The motion of tuning fork is considered as an oscillatory motion. **bec it is a periodic motion where it moves around its rest position**

3- The kinetic energy of a pendulum is the maximum when it passes its rest position. **because the speed is max at rest point**

4- Periodic time  $\times$  Frequency = 1

**Because periodic time and frequency are multiplicative inverse**





## Periodic time decreases while frequency increases



**What happens when?**

Number of complete oscillations produced by an oscillating object is increases, Concerning to:

- 1) Periodic time
- 2) Frequency

**What's meant by?**

**This means frequency equals  $900 \div 30 = 30$  HZ (30 oscillations \ sec)**

- 1) The Number of complete oscillations mad by a spring in period of half minute is 900 complete oscillations.
- 2) The time taken by a stretched string to make 120 complete oscillations is 2 minutes. **This means periodic time =  $120 \div 120 = 1$  sec**



2024

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