

ASSIGNMENT

CLASS- VII (CHAPTER-MOTION AND TIME)

Q1. One word questions:

- i. The metallic ball of the pendulum.

Ans. Bob

- ii. The symbols of all units are written in which form?

Ans. Singular form.

- iii. The time taken by the pendulum to complete one oscillation is called.

Ans. Oscillation.

- iv. One microsecond is

Ans. One millionth of a second.

- v. One nanosecond is

Ans. One billionth of a second.

- vi. The distance-time graph for the motion of an object moving with a constant speed is a

Ans. Straight line passing through the origin.

Q2. What is the basic unit of time? What is its symbol?

Ans. The basic unit of time is a second. Its symbol is s.

Q3. What is the basic unit of speed and what is its symbol?

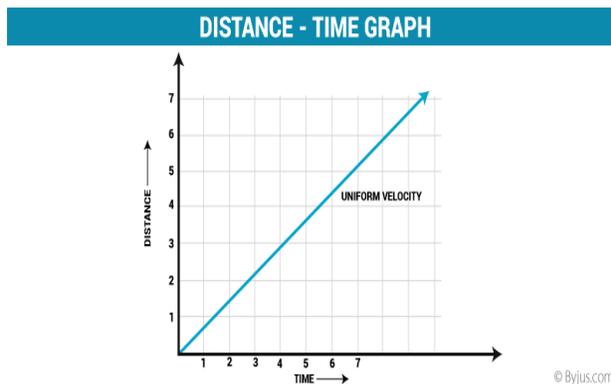
Ans. Basic unit of speed is meter per second. It is expressed as m/s.

Q4. What is speedometer?

Ans. Speedometer is an instrument which indicates the speed of a vehicle.

Q5. What is distance-time graph? What does it represent and draw a distance time graph for uniform motion.

Ans. The graph plotted between distance and time with distance at Y-axis and time at X-axis is known as distance-time graph. Distance-time graph represents the speed of an object, shown in figure below:



Q6. What is speed?

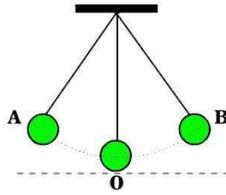
Ans. The distance moved by an object in a unit time is called its speed.

Q7. What is motion?

Ans. Motion is a change in position of an object over time

Q8. What is oscillatory motion? Give example?

Ans. The to and fro motion of an object is called oscillatory motion. For example: The motion of pendulum.



Q9. What is circular motion?

Ans. Circular motion is rotational motion of an object along a circular path.

Q10. What is non-uniform motion?

Ans. If the speed of an object moving along a straight line keeps changing, its motion is said to be non-uniform. A car moving on a road with traffic is an example of non uniform motion. Here the speed of car will not remain the same throughout.

Q11. What is uniform motion?

Ans. Uniform motion occurs when an object travels in a straight line covering equal distances in equal intervals of time. Velocity of the object remains constant throughout. Movement of the blades of the ceiling fan is an example of uniform motion.

Q12. What is the smallest time interval that can be measured with commonly available clocks and watches?

Ans. The smallest time interval that can be measured that can be measured with commonly available clocks and watches is one second.

Q 13. What is a simple pendulum?

Ans. A simple pendulum consists of a small metallic ball or a piece of stone suspended by a rigid string with a thread. The metallic ball of the pendulum is called the bob of the pendulum.

Q14. How time was measured when pendulum clocks were not available?

Ans. Many time measuring devices were used in different parts of the world before the pendulum clocks became popular. Sundials, water clocks and sand clocks are some examples of such devices.

Q15. What are quartz clocks?

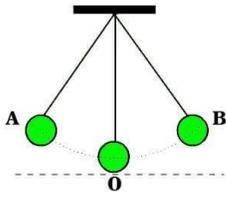
Ans. Nowadays most clocks or watches have an electric circuit with one or more cells. These clocks are called quartz clocks. The time measured by quartz clocks is much more accurate than that by the clocks available earlier.

Q16. What is average speed?

Ans. Average speed of an object is calculated when two different distances and time are given. It is defined as total distance travelled divided by the total time taken. For example: If a car covers the distance 10km in 1 hour and 15 km in next one hour. So the average speed is  $10\text{km} + 15\text{km} / 1\text{hr} + 1\text{hr} = 25\text{km} / 2\text{hr} = 12.5\text{ km/hr}$ .

Q17. Define one oscillation?

Ans. When the bob of the simple pendulum is released from one end it moves to the opposite side till it reaches the same height before returning to its original position. The time taken by the pendulum to move to the opposite end and return to its original position is called as the time period and that movement is one oscillation.



When its bob starting from its mean position O, moves to A, to B and back to O completes one oscillation.

Also when the bob moves from one extreme position A to the other extreme position B and comes back to A completes one oscillation.

Q18. What is time period of pendulum?

Ans. The time taken by pendulum to complete one oscillation is called the time period of pendulum.

Q19. Boojho walks to his school which is at a distance of 3Km from his home in 30 minutes. On reaching he finds that the school is closed and comes back by a bicycle with his friend and reaches home in 20 minutes. What is his average speed?

Ans. Distance covered by boojho when he travels from home to school=3km.

Distance covered by boojho when he travels from school to home= 3km

Total distance covered= 6km.

Time taken during 1<sup>st</sup> case= 30 minutes.

Time taken during 2<sup>nd</sup> case= 20 minutes.

Total time taken= 50 minutes.

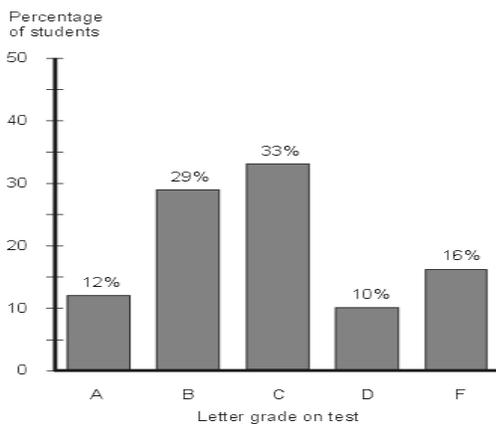
Average speed=  $6\text{km}/50\text{minutes} = 3\text{km}/25\text{ min}$ .

Q22. What is graph? Classify and give examples.

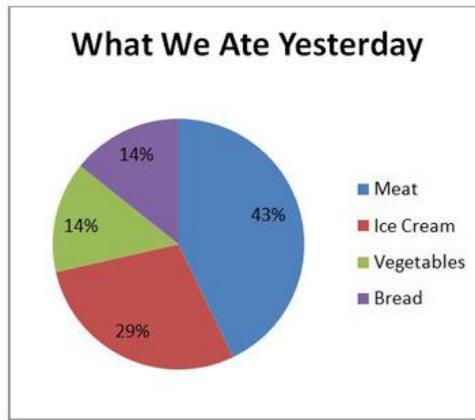
Ans. A diagram showing the relation between variable quantities, typically of two variables, each measured along one of a pair of axis at right angles.

Graphs are classified as:

(1) Bar graph: A bar graph is chart that uses bars to show comparison between categories of data.

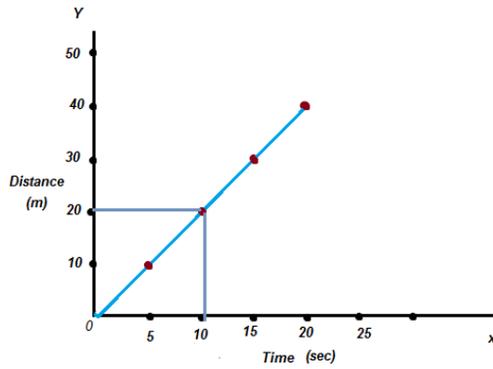


(2) Pie chart: A pie chart is a special chart that uses “pie slices” to show relative sizes of data. The chart is divided into sectors where each sector shows relative size of each value. For example fractions of what we ate yesterday are



explained below:

(3) line graph: A graph in which points representing values of a variable for suitable values of an independent variables are connected by a broken line. Example: distance time graph.



**CLASS-VII**

**CH-ELECTRIC CURRENT AND ITS EFFECT**

1. In the symbol of an electric cell what do the two lines indicate?  
The longer line represents the positive terminal and the thicker, shorter line represents the negative terminal.
2. What is a battery?  
A combination of two or more cells is called a battery.
3. What is an element?  
An element is a coil of wire used in electrical appliances. The wire gets hot when an electric current passes through it.
4. Give a list of five appliances that use elements.  
Irons, kettles, geysers, immersion heaters and hair dryers.
5. Name the principle on which an electric heater work.  
Heating effect of the electric current
6. Name the substance which behave as magnets on passing an electric current.  
Electromagnet
7. What are the factors on which the amount of heat produced in a wire depend on?  
Material, length and thickness of the wire.
8. Who was the first person to observe magnetic effects of current?  
Hans Christian Oersted
9. What is ISI mark?  
ISI mark of Bureau of Indian Standards ensures that the appliance is safe and wastage of energy is minimum
10. Write the three main components of electric circuit.  
Electric cell, switch, electric device(bulb) and conductor wires
11. What is a fuse?  
Fuse is a safety device and it is inserted in electrical circuits to prevent damages to electrical circuits and appliances due to excessive currents.
12. How does a fuse work?  
If the current exceeds the safe limit, fuse melts and break the circuit. Thereby it saves electrical devices from damage.
13. What kinds of wires are used for making electric fuses?  
Wires made of special materials which melt quickly and break when large currents are passed through them are used for making electric fuses.
14. Expand MCB and write its use?  
MCB-Miniature Circuit Breaker  
Use-it automatically gets turned off when current in circuit exceeds the safe limit.  
And thereby prevents damage
15. CFL is better than electrical bulb. Why?

Electric bulb results in wastage of energy in the form of heat. This wastage can be reduced by using CFL (compact fluorescent lamps). Moreover, CFL can be used in ordinary bulb holders.

16. What is heating effect of electric current?

When an electric current flows through a wire, the wire gets heated. It is called the heating effect of electric current.

17. What is magnetic effect of electric current?

When electric current flow through a wire, it behaves like a magnet. This is called magnetic effect of electric current.

18. Write any two reasons for excessive current in electrical circuits.

1. Direct touching of wires if insulation has come off due to wear and tear. This may cause short circuit.
2. Connection of many devices to a single socket. This may cause overload in circuit.

19. Why does an electric bulb glow?

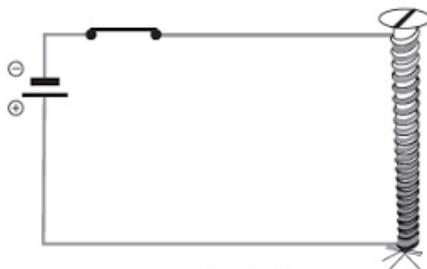
When current is passed, the filament of an electric bulb gets heated to such a high temperature that it starts glowing.

20. What is electromagnet? List the uses of electromagnet. Draw diagram of an electromagnet.

A magnet consisting of a coil of wire wound around a soft iron core that acts like a magnet only when current flows through the wire.

Uses of electromagnet-

1. To lift heavy iron articles.
2. To separate iron from a garbage dump.
3. In loudspeakers, telephones, electric fans and electric bell etc.



**Fig. 14.3**

21. Explain the working of electric bell.

An electric bell consists of a coil of wire wound on a piece of iron. This arrangement acts as an electromagnet. When the switch is on, current flows to the electromagnet. It attracts a strip of iron placed close to it. The hammer attached to iron strip then hits a gong to ring the bell. However, as soon as the iron gets attracted to electromagnet, the circuit breaks, causing the flow of current to the electromagnet to stop. It can no longer

attract the iron strip. The iron strip returns to its original position. The whole process is

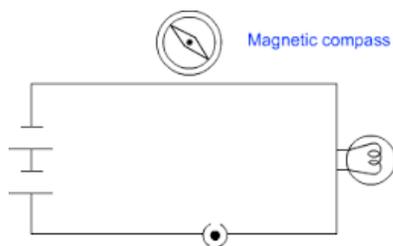


repeated when the switch is pressed again.

22. Prove with the help of an activity that an electric current can deflect the needle of a magnetic compass.

Set up a simple circuit on a table with a battery, with its two ends connected to a wire and switch. Keep a magnetic compass near the circuit. When we switch on the circuit, electric current starts flowing through the wires. It is observed that the needle of the compass gets deflected from its rest position.

When we switch the circuit off, the compass needle comes to the rest position again.



Magnetic Effect of Electric Current