الاجابات نهاية الصفحة

Answer the following questions:

Question 1

## A Write the scientific term for each of the following statement:

1. The point of connection of the two chromatids in a chromosome.

2. The line that passes through the optical centre of the lens without passing through the two centres of curvature of its faces.

3. The distance between the pole of a spherical mirror and its center of curvature.

4. It's the Sun and eight planets revolving around it.

5. The speed of a moving body that covers equal distances at unequal time intervals.

B What is meant by ... ?

1. The value of the length of the shortest straight line between two positions = 5 m. 2. The relative speed.

3. Spindle fibers during cell division.

C A person moves in the path (a b c d e) as shown in figure, he covered a distance of 10 m. northward in 2 seconds, then he covers 30 m. eastward in 10 seconds. and followed by 40 m. southward in 8 seconds, finally 30 m. westward in 5 sec.

1. Calculate the displacement of the person from the start of motion to end.
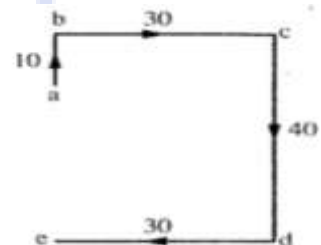
2. In which part of the person motion, his speed was the least?

Question 2

A Choose the correct answer :

1. The......... is the phase in which the cell is prepared for division by doubling the genetic

material.

a. prophase

b. interphase

c. metaphase

d. anaphase

2. A concave mirror has a focal length of 8 cm. An object is placed in front of this mirror forming an image at a distance 20 cm from the mirror. This means that the object is placed at...........from the mirror.

a. 8 cm.

c. 20 cm.

b. less than 8 cm.

d. more than 8 cm. and less than 16 mc.

3. A doctor advised a person who has a sight defect to use glasses with convex lenses. It

means that this person suffers from.........

a. a decrease in the convexity of the eye lens surface.

b. an increase in the convexity of eye lens surface.

c. an increase in the eyeball diameter.
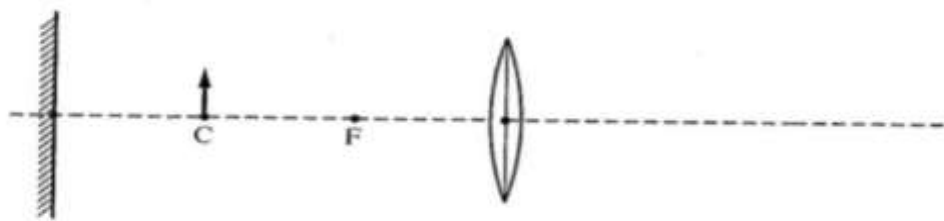
d. disability of seeing far objects clearly.

4. Reproduction by spores occurs in all the following organisms, except.........

a. starfish.

b. fungus.

c. bread mould.

d. mushroom.

5. One of the vector physical quantities is………

a. time of a car trip.

b. length of a pen.

c. mass of a cat.

d. force by which person pushes a stone.

B In the figure shown, an object is placed at the centre of curvature of one face of a convex lens of focal length 6 cm. Then, a plane mirror is placed at the other side of the object at 8 cm. from the object. Copy the diagram in your answer sheet and answer:

1. Draw the path of light rays incident on the lens to form an image on a screen in front of the lens.

2. Calculate the distance between the two images formed by the lens and the mirror.

C The figure in front of you shows a phase of cell division. Answer the following:

1. What is the type of this division ?

2. What is the name of this phase?

3. What is the importance of this type of division ?
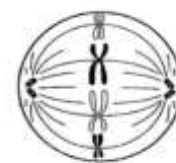
Question 3

A Put (✓) in the front of correct statements and (x) in front of the wrong ones:

1. The solar system includes several galaxies. ( )

2. If the angle between the incidence ray and the reflected ray is 60°,

the angle between the reflected ray and the reflecting surface is 60°. ( )

3. The displacement of an object is measured in m/sec. ( )

4. An assumption of the crossing star theory is that a star revolves near the Sun.( )

5. Bread mould fungus reproduces by binary fission. ( )

B Give reasons for the following:

1. Meiotic cell division is called reduction division.

2. A donor for a part of the liver suffers no harm and can survive.

C A car moved from Banha to Cairo at a distance of 40 km in 30 minutes, then it returns back from Cairo to Banha in the same time.

Calculate (in km/h) :

1. The car velocity from the beginning to the end of the journey.

2. The average speed of the car during the total time.

Question 4

A What would happen in each of the following ... ?

1. Absence of anther from the floral plants.

2. To the value of velocity of a moving object if the time of the same displacement is increased to double.

3. The organization and arrangements of stars in the galaxy were changed.

4. Focusing laser on the gold Nano-particles in the cells infected by cancer.

5. A light ray is incident passing through the center of curvature of a concave mirror.

B Mention the properties of the formed image in each of the following cases:

1. An object is placed in front of a convex mirror.

2. An object is placed in front of a convex lens at a distance less than its focal length.

3. An object placed at the focus of a convex lens.

C A car speeds up from 0 m/s to 10 m/s in 4 seconds, then it slows down to 5 m/s in 2 seconds. Calculate :

1. The acceleration of the moving car in the first stage and the acceleration of the moving car in the second stage.

2. The time taken by the car in the second stage to stop if it moves at the same rate of velocity change.

## A Write the scientific term for each of the following statement:

1. The point of connection of the two chromatids in a chromosome.
centromere

2. The line that passes through the optical centre of the lens without passing through the two centres of curvature of its faces. **Secondary axis of the lens**

3. The distance between the pole of a spherical mirror and its center of curvature. **Radius of curvature of the mirror**

4. It's the Sun and eight planets revolving around it. **solar system**

5. The speed of a moving body that covers equal distances at unequal time intervals. **irregular speed**

B What is meant by ... ?

1. The value of the length of the shortest straight line between two positions = 5 m. **The value of displacement = 5m**

2. The relative speed. **The speed of moving object with respect to stationary or moving observer**

3. Spindle fibers during cell division. **The speed of moving object with respect to stationary or moving observer**

C A person moves in the path (a b c d e) as shown in figure, he covered a distance of 10 m. northward in 2 seconds, then he covers 30 m. eastward in 10 seconds. and followed by 40 m. southward in 8 seconds, finally 30 m. westward in 5 sec.

1. Calculate the displacement of the person from the start of motion to end.
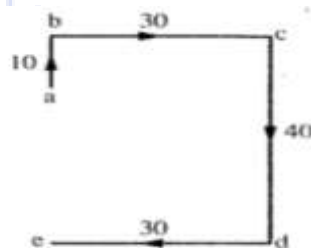
The displacement = 40-10 =30 m to the South.

V(ab) = 10/2 = 5 m/c

V(bc)= 30/33 = 3 m/c

Vcd = 40/8=5 m/c

V(ed) = 30/5 = 6 m/c

2. In which part of the person motion, his speed was the least?

⟹The person speed moves with the least possible in the part (bc)

Question 2

A Choose the correct answer :

1. The......... is the phase in which the cell is prepared for division by doubling the genetic material.

a. prophase

b. interphase

c. metaphase

d. anaphase

2. A concave mirror has a focal length of 8 cm. An object is placed in front of this mirror forming an image at a distance 20 cm from the mirror. This means that the object is placed at...........from the mirror.

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d. **more than 8 cm. and less than 16 mc**.

3. A doctor advised a person who has a sight defect to use glasses with convex lenses. It means that this person suffers from.........

a. a decrease in the convexity of the eye lens surface.

b. an increase in the convexity of eye lens surface.

c. an increase in the eyeball diameter.

d. disability of seeing far objects clearly.

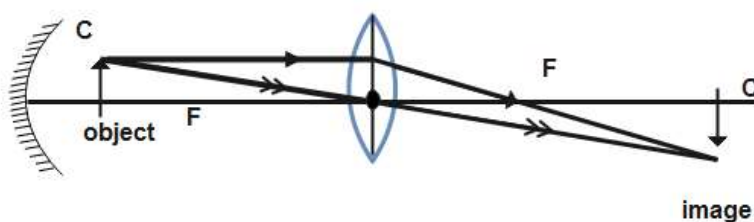4. Reproduction by spores occurs in all the following organisms, except.........

a. starfish.

b. fungus.

c. bread mould.

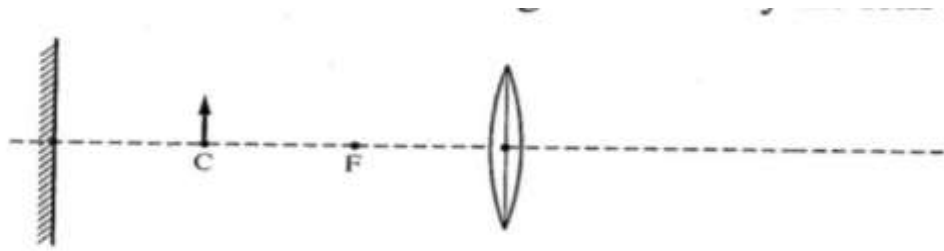d. mushroom.

5. One of the vector physical quantities is………

a. time of a car trip.

b. length of a pen.

c. mass of a cat.

d. **force by which person pushes a stone.**

B In the figure shown, an object is placed at the centre of curvature of one face of a convex lens of focal length 6 cm. Then, a plane mirror is placed at the other side of the object at 8 cm. from the object. Copy the diagram in your answer sheet and answer:

1. Draw the path of light rays incident on the lens to form an image on a screen in front of the lens.

2. Calculate the distance between the two images formed by the lens and the mirror.
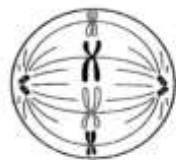
-The distance between the 2 images = 12 +12+8+8= 40 cm

C The figure in front of you shows a phase of cell division. Answer the following:

1. What is the type of this division ? **Mitosis**

2. What is the name of this phase? **Metaphase**

3. What is the importance of this type of division ? **The growth of living organism**

The compensation of the damaged cell

Question 3

A Put (✔) in the front of correct statements and (x) in front of the wrong ones:

1. The solar system includes several galaxies. (**x**)

2. If the angle between the incidence ray and the reflected ray is 60°,

the angle between the reflected ray and the reflecting surface is 60°. (**✔**)

3. The displacement of an object is measured in m/sec. (**x**)

4. An assumption of the crossing star theory is that a star revolves near the Sun.(**x**)

5. Bread mould fungus reproduces by binary fission. (**x**)

B Give reasons for the following:

1. Meiotic cell division is called reduction division.

Because it reduces the number of chromosomes to the half in each of the produced cell [gametes)

2. A donor for a part of the liver suffers no harm and can survive.

Because Liver cells divide by mitosis to compensate damaged part

C A car moved from Banha to Cairo at a distance of 40 km in 30 minutes, then it returns back from Cairo to Banha in the same time.

Calculate (in km/h) :

1. The car velocity from the beginning to the end of the journey.

$$\textbf{velocity} = \frac{\textbf{displacement}}{\textbf{time}} = \frac{\textbf{Zero}}{\textbf{1}} = \textbf{Zero}$$

2. The average speed of the car during the total time.

$$\textbf{Average speeds total distance} = \frac{\textbf{tatal distance}}{\textbf{total time}} = \frac{\textbf{80}}{\textbf{1}} = \textbf{80 km/h}$$

Question 4

A What would happen in each of the following ... ?

1. Absence of anther from the floral plants.
   poller gran don't formed and the sexual reproduction doesn't take place

2. To the value of velocity of a moving object if the time of the same displacement is increased to double. **The speed of the moving object decreased to the half**

3. The organization and arrangements of stars in the galaxy were changed. **The shape of the galaxy is changed**

4. Focusing laser on the gold Nano-particles in the cells infected by cancer. **The gold molecules absorb light energy and change it to heat leading to burn and kill the cancer cells**

5. A light ray is incident passing through the center of curvature of a concave mirror. **The ray reflects on itself.**

B Mention the properties of the formed image in each of the following cases:

1. An object is placed in front of a convex mirror.

 virtual, erect and diminished images always Formed.

2. An object is placed in front of a convex lens at a distance less than its focal length. **virtual, erect and magnified image is formed at the same side of the object.**

3. An object placed at the focus of a convex lens. **No image is formed.**

C A car speeds up from 0 m/s to 10 m/s in 4 seconds, then it slows down to 5 m/s in 2 seconds. Calculate :

1. The acceleration of the moving car in the first stage and the acceleration of the moving car in the second stage.

$$(a)_1 = \frac{V_2 - V_1}{T} = \frac{10 - 0}{4} = \textbf{2.5 m/sec}^2.$$

$$(a)_2 = \frac{V_2 - V_1}{T} = \frac{5 - 10}{2} = \textbf{2.5 m/sec}^2.$$

2. The time taken by the car in the second stage to stop if it moves at the same rate of velocity change.

$$T = \frac{V_2 - V_1}{a} = \frac{0 - 5}{-2.5} = \textbf{2.5 sec.}$$