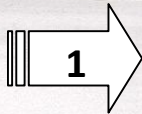




Ministry model exams For Third prep. first term Science

Let's see who the best
in solving ...is . Me or
those girls????





CAIRO GOVERNORATE
CAIRO EDUCATIONAL DIRECTORATE
THE COMPLETION OF THE BASIC EDUCATION CERTIFICATE
EXAM. FIRST TERM , 2010 - 2011
SCIENCE **TIME : 2 HOURS**

امتحان شهادة إتمام الدراسة لمرحلة التعليم الأساسي (عام)
الفصل الدراسي الأول ٢٠١٠ - ٢٠١١
العلوم بالإنجليزية (الأسئلة في أربع صفحات على وجهي الورقة) الزمن : ساعتان

ANSWER THE FOLLOWING QUESTIONS IN YOUR ANSWER PAPER

Question (1) :

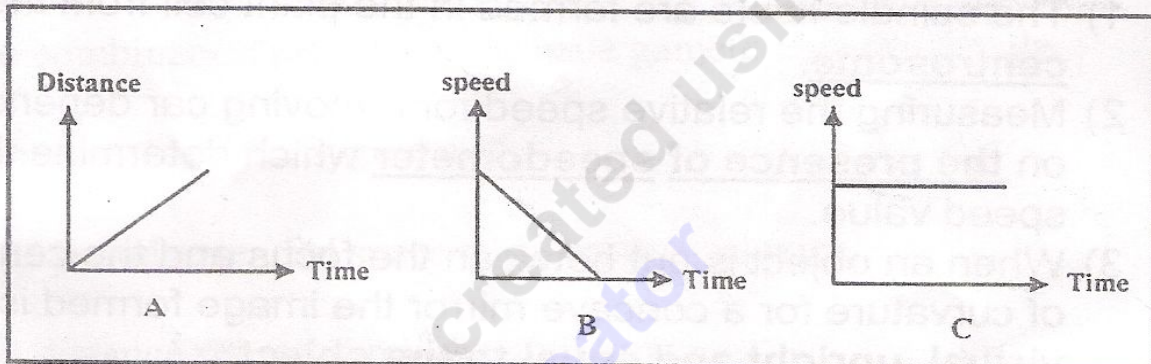
A) Complete the following statements with the suitable words :

- 1) The point that is in the middle of the reflective surface of the spherical mirror is Normal.....
- 2) The value of change of an object's speed in one second is acceleration.....
- 3) Meiosis division occurs in the anther of a flowering plant to produce asexual.....
- 4) The solar system is located in one of the spiral arms of
galaxy. milky way

B) Show by a labeled diagram only the properties of the image formed by a concave lens, when the object is at a distance equal double the focal length.

(بقية الأسئلة في الصفحة الثانية)

C) The following graphs (A,B,C) each of them represent the motion of a body . Describe the motion of this body in each case.



Question (2) :

A) Mention what would happen in each of the following cases:

- 1) Separating a starfish arms, while each arm contains a part of the central disc.
- 2) A light ray fall on a concave mirror passing by its center of curvature.
- 3) Each two homologous chromosomes come close to each other to form tetrad.
- 4) The distance between a planet and the sun increases.

B) Explain the evolution of the solar system as the vision of the French scientist Laplace .

C) A body started to move from point (X) to point (A) covering a distance of 30 meters to the North in 20 seconds ,then it moves 60 meters Eastward to point (B) within 30 seconds, then it moves 30 meters southward to point (C) within 10 seconds. Calculate:

- 1) The total distance covered by the body.
- 2) The total time taken by the body to cover this distance.
- 3) The average velocity.

(بقية الأسئلة في الصفحة الثالثة)

Question (3) :

A) Rewrite the following statements after correcting the under lined words:

- 1) The spindle fibers are formed in the plant cell from the centrosome.
- 2) Measuring the relative speed for a moving car depends on the presence of speedometer which determine the speed value.
- 3) When an object is put between the focus and the center of curvature for a concave mirror the image formed is virtual, upright and equal to the object.

B) Choose from column (B) what suits it from column (A):

A	B
1- Displacement value	a) The actual length of the path that a moving object takes.
2- Closed universe theory	b) The length of the shortest straight line between to positions.
3- Open universe theory	c) There is no definitive end to the universe.
	d) The universe contracts until it becomes very hot preparing for a new Big bang.

C) Explain each of the following:

- 1- The products of the meiosis division are different than that of the mitosis division .
- 2- A short -sighted person needs a medical eye glasses with concave lenses .

(بقية الأسئلة في الصفحة الرابعة)

Question (4) :

A) Write the scientific term for each of the following statements:

- 1) The combination process of the male gamete with the female gamete to form the zygote *acts*
- 2) A wide and extended space that contains galaxies.
- 3) The distance moved through a unit time.
- 4) The straight line that passes by the pole of the mirror and its centre of curvature .

B) Give reason for:

- 1) Force and acceleration are vectors physical quantities.
- 2) The length of the day differ from one planet to another.
- 3) The light ray falling perpendicular on the reflecting surface reflects on itself.

C) What is the general structure of the chromosome? Explain by the help of a labeled diagram.

(انتهت الأسئلة مع دعواتنا لكم بالنجاح)

Question One

A. Complete the following statements:

1. & are considered from scalar physical quantities.
2. The shortest year is on planet.
3. The gamete contains the number of chromosomes found in somatic cells.
4. lens is used to treat long sighted person.
5. During metaphase Moves towards the equator of the cell.

B. Give reasons for the following:

1. On their flights, pilots take into consideration the velocity (speed & direction) of the wind.

Answer: In order to calculate the amount of fuel needed to complete the trip.

The plane which flies against the direction of the wind faces air resistance & needs more fuel than that flies in its direction.

2. Planets are kept in their orbits around the sun.
3. Acceleration might be decreasing.

Answer: When the car's speed decreases the movement decreases & it's described as deceleration.

4. There's one principle axis in the spherical mirrors.

Answer: That's because the mirror is part of one hollow sphere.

Question 2

A. Choose the correct answer:

1. The chromosomes chemically consist of
a. Nucleic acid (DNA) b. proteins c. carbohydrates d. a and c
2. Asexual reproduction occurs in yeast fungus through
a. regeneration b. budding c. gametes d. vegetative reproduction
3. The focal length of a concave lens is 6 cm so the radius of this lens is
a. 3 cm b. 6 cm c. 9 cm d. 12 cm

4. An object is placed in front of a concave mirror at a distance less than double the focal length, so the properties of the image formed are
 a. virtual , enlarged image
 b. real , small image
 c. real , enlarged image
 d. virtual , small image
5. The period of time taken by Saturn to rotate around the sun is
 a. 12 years b. 29 years c. 84 years d. 165 years
6. contains the genetic material from both parents & grows to become an individual with combined traits from both parents.
 a. gamete b. zygote c. cytoplasm d. chromosome

B. What's meant by?

1. Average speed
2. Galaxies

Question 3:

A. Compare between each of the following:

1. Somatic cells & gametes in terms of the no. of chromosomes.
3. The center of curvature of the lens
4. The first law of light reflection
2. Mitotic division & meiotic division in terms of site occurrence & the purpose of the division.
3. Sexual reproduction & asexual reproduction in terms of no. of parents & genetic traits of the resulting offspring.
4. Regeneration & budding.

B. Mention one function or one use for the following:

1. The convex lens 2. Hubble telescope
3. Light year 4. Contact lens

Question four

A. What happens if?

1. There's no gravity to keep the planets in their orbits around the sun.
2. The inner parts of chromatids in each tetrad are exchanged through prophase I of the first meiotic division.

B. Write the scientific term for the following:

1. The change in object's location as time passes according to the location of another object.
2. The disease which infects the eye & makes the lens opaque.

C. A car moves with a speed 140 km/h Calculate the distance (in meters) covered by the car in a period of time = 7 seconds.

A. Complete the following statements:

1. If a body starts its motion from rest therefore its initial speed equals
2. The presence of the moon between the earth & the sun results in the phenomenon of
3. The chromosome consists of connected at the
4. Asexual reproduction in bacteria occurs by
5. Crossing over occurs in phase of cell division.
6. The offspring resulting from reproduction has characteristics different from its parents.

B. Give reasons for the following:

1. Crossing over during meiosis causes the variation of traits.
2. Acceleration sometimes is increasing.
3. The lens has 2 foci while the spherical mirror has one focus.
4. The galaxy where earth is found is called the Milky Way.

A. Choose the right answer:

1. When a light ray falls on a smooth surface the light ray
 - a. reflects
 - b. refracts
 - c. passes without refraction
2. Meiotic division occurs in cells
 - a. liver
 - b. ovary
 - c. testis
 - d. b and c
3. If a light ray falls on a convex lens passing through its focus then:
 - a. It penetrates passing without refraction
 - b. Refracts parallel to the principle axis
 - c. Passes through the optical center without refraction
 - d. No right answer
4. The parent individual disappears when the reproduction occurs in
 - a. bacteria
 - b. yeast
 - c. bread mould
 - d. all the previous
5. Which of the following is a scalar quantity?
 - a. length & area
 - b. displacement & acceleration
 - c. mass & force
 - d. no right answer

B. What's meant by the following?

- | | |
|---------------------------|-------------------------------------|
| 1. The focus of the lens. | 2. Displacement |
| 3. Velocity | 4. The principle axis of the mirror |

Third question

A. Put (✓) in front of the right statements & (X) in front of the wrong statements:

1. The images formed by lenses are real or virtual.
2. The acceleration is negative when its value is increasing.
3. The planets revolve around the sun in orbits.
4. The spherical mirror has two axes.
5. Physics use some mathematical means such as graphs & tables.

B. If the angle between the reflected ray & the reflecting surface is 50° find the angle of incidence.

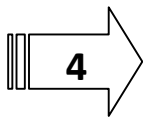
Fourth Question

A. What happens when?

1. The average velocity is the same as the constant velocity.
2. A plane mirror is placed on the left of the driver instead of the convex mirror.
3. Yeast is added to a warm sugar solution.

B. If a person stands at a distance of 4 meter from a plane mirror. What's the distance between the person & his image in the mirror?

C. Compare between the nebular theory & the crossing star theory.



Model test

First question:

A. Complete the following statements:

1. The solar system is found in one of on the edge of the milky way galaxy & it finishes one complete cycle around the center of the galaxy every year.
2. The spindle fibers in the animal cell consist of While in the plant cell it consists of the condensation of at the poles.
3. The angle of reflection of a light ray falling perpendicularly on a reflecting surface equals Therefore it reflects
4. Asexual reproduction in bacteria occurs by while in mushroom it occurs by

B. What's the relation between the genetic structure of the parent & the offspring in the following cases?

1. Binary fission in paramecium
2. The plant that results from growing seeds.

C. Explain what happens in the following cases:

1. The fusion of dust with ice & gases in the solar nebula.
2. A body is placed at the focus of a convex lens.
3. The planets become nearer to the sun than its real positions.
4. The solar nebula cools according to Laplace.

Second Question

A. Write the scientific term:

1. The phase where the processes that prepare the cell for division occur also the amount of genetic material is doubles.
2. The straight line that passes through the center & pole of the mirror.
3. The unit used to measure distances in the universal space.
4. The ability of some organisms to renew their missing parts.
5. The expansion of the universe & the fusion of atomic particles forming hydrogen & helium.

B. Explain by a diagram the way of formation of sperms in humans.

C. The following table explains the relation between the displacement & time for a body which moves in a certain direction:

Displacement (meter)	12	24	36	48
Time (second)	2	4	6	8

From the previous table **describe** the movement of the body then **calculate** the velocity of this body.

Third Question

A. What's the phase of cell division in the following situations:

1. Homologous chromosomes connected to the spindle fibers arrange on the cell's equator.
2. Crossing over occurs

B. Show by a diagram the properties of the image formed for an object placed in front of a convex lens at a distance more than the focal length & less than double the focal length showing the path of the light rays.

C. A car covered 100 meters north in 40 seconds then 200 meters east in 100 seconds then 100 meter south in 20 second then returned to the starting point in 80 seconds. Calculate the following:

1. The total distance which the car moved
2. The total time used
3. The average speed
4. The displacement
5. The velocity

Fourth Question

A. Give reasons for the following:

1. Sexual reproduction is a source of genetic variation

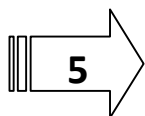
2. The length of the year is different from a planet to another.
3. A concave lens is used in treating short sight.

B. Compare the following:

1. Mitosis & meiosis as to the number of resulting cells in the importance & the site of occurrence.
2. The nebular theory, the crossing star theory & the recent theory as to the origin of the solar system.

C. Choose the right answer from between brackets:

1. Which of the following is a vector quantity?
(Length & area – displacement & acceleration – mass & force).
2. The two factors which are needed to describe the motion of a body are:
(speed & time – distance & time – area & time)
3. The size of the image formed by the plane mirror is always
(Bigger than the size of the body – equal to the size of the body – smaller than the size of the body).



Model Test

First Question

A. Complete the following statements:

1. Galaxies exist in the shape of such as the galaxy that contains the sun.
2. The convex mirror reflecting surface is part of the surface of the sphere while the converging mirror reflecting surface is part of the surface of the sphere.
3. Displacement is quantity while density is quantity.
4. Reproduction has 2 types and
5. The unit of measuring acceleration is
6. Fertilization is the fusion of with to form

B. Correct the following statements:

1. The universe expanded & the fusion of the atomic particles formed oxygen & nitrogen gases.
2. A concave mirror with a focal length = 10 cm therefore the radius of the sphere is 5 cm.
3. Contact lenses are very thin lenses made of glass.
4. Acceleration is the rate of change of distance with speed.

Second Question

A. Write the scientific term:

1. The ability of some animals to compensate the missing parts.
2. A division that occurs in the somatic cells of living organisms.

3. The force that keeps planets in their orbits around the sun.
4. The distance which light covers in one year.
5. The line passing through the 2 centers of curvature of the spheres, it also passes through the optical center.
6. The bouncing of light in the same medium when it meets a reflecting surface.

B. Compare between:

1. Regular speed & irregular speed
2. Displacement & distance

Third Question

A. Give reasons for the following:

1. Asexual reproduction produces offspring identical to the parents.
2. it's difficult to measure the uniform velocity.
3. When an object is placed at the focus of a convex lens no image is formed.
4. Concave mirrors can be used to generate a large amount of heat.

B. A car moves in a straight line. Its speed changes from 8 m/s to 16 m/s in a period of 4 seconds. Calculate the value of the acceleration.

Fourth Question

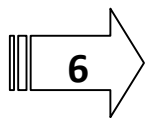
A. Choose the right answer:

1. The scientist who established the Nebular theory is
a. Newton b. Einstein c. Alfred Hale d. Laplace
2. Crossing over occurs at the end of
a. prophase I b. interphase I c. metaphase I d. anaphase I
3. The light ray which falls parallel to the principle axis of a concave mirror
a. reflects passing through center of curvature
b. reflects on itself
c. reflects passing through the focus
d. reflects parallel to the secondary axis.

B. Write brief notes about:

1. The crossing star theory

2. Crossing over
3. Binary fission
4. The way gametes are formed



Model Test

First Question

A. Complete the following statements:

1. One of the forms of asexual reproduction is & it occurs in unicellular organisms such as & multicellular organisms such as &
2. The point in the middle of the reflecting surface of a concave mirror is called
3. Displacement is defined by &
4. Dividing total distance by the total time taken by the body is
5. Chromosomes are at the equator of the cell in the phase.

B. Correct the following statements:

1. When the average speed isn't equal to the uniform speed then the body covers unequal distances in unequal time intervals.
2. Somatic cells divide by meiosis which causes the growth of living organisms & compensation of dead cells.
3. Mass is an example of vector quantities.
4. Crossing over occurs at the end of prophase I.
5. Long sight is treated by concave lens.

Second Question

A. Write the scientific term:

1. A galaxy which contains the sun & the solar system.
2. A point inside the lens on the principle axis in the mid distance between its faces.
3. It includes all the galaxies, stars & planets.

4. The straight line passing through the pole of the mirror & the center of curvature.
5. The uniform speed by which a body moves to cover the same distance in the same time needed to cover this distance.
6. The point of connection of the 2 chromatids.

B. Compare between:

1. Meiosis cell division & mitosis cell division.
2. The nebular theory & the crossing star theory.

Third Question

A. Give reasons for the following:

1. Earth is kept in a fixed orbit around the sun.
2. The length of the day differs on different planets.
3. Convex lens is used to treat long sight.
4. There's a difference between the average speed & velocity.

B. A runner covers 50 meters in a race in 5 seconds. Calculate the average speed of the runner.

Fourth Question

A. Choose the right answer:

1. The scientist who established the modern theory of the world is
a. Molten b. Alfred Hale c. Laplace d. Chamberlain
2. The unit of measuring acceleration is
a. m/s b. m.s c. m/s^2 c. m/s^3
3. Bread mould reproduces by
a. regeneration b. budding c. binary fission d. spores
4. The light ray that falls passing through the optical center of the convex lens penetrates
a. without refraction b. in the form of parallel rays
c. passing through the focus d. parallel to the principle axis

B. Write short notes about:

1. the function of DNA
2. The second law of reflection
3. Vegetative reproduction
4. Fertilization