Science of Third Preparatory

Mr. Mohammed Sultan

Doctorate in Sciences

01060693893

Questions & Exams (All units in first term)

What is your responsibility for your nation?

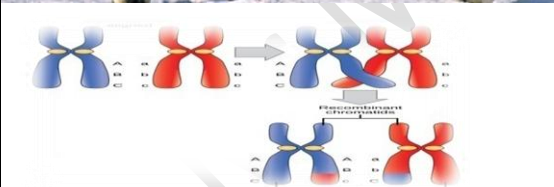What is your contribution going to be?

The answer starts here!!

- Competing with yourself is the best competition.
- He who believes in Allah is rewarded.
- He who lives in fear will never be free.
- Praise your friend in public and blame him secretly.
- Choose your words before speaking.
- Only people can free themselves and achieve their dreams.

The Universe and the Solar System

Reproduction & species

Mirrors

Force and Motion

مقدمة لأحبائي الطلاب:

أحبائي الطلاب يتكون هذا الملخص من أسئله فقط. وهذا لتسهيل عملية المذاكره للطالب المتميز وحتى يعلم الطالب المهمل لدروسه مقدار مالا يعلم. وهذه الأسئله على قسمين: القسم الاول وفيه جميع الأسئله المهمة والمتوقعه في الاختبارات عن كل درس على حده، لكي يتسنى لك عزيزي الطالب اختبار مدى استيعابك لكل درس وترسيخ ما تعلمته من هذا الدرس.

اما القسم الثاني فيتكون من امتحانات شامله للمقرر كامل، فيجب عليك حل هذه الامتحانات جميعها قبل ليلة الامتحان لكي تتفوق في مدرستك وتستطيع بعدها التفوق في الثانوية والجامعة وخدمة بلدك مصر والنهوض بأمة الأسلام.

إن شاء الله انتظروا الاجابات الكامله لهذه الأسئله في الملخص القادم بإذن الله

أسأل الله أن ينفعنا بما علمنا وأن يعلمنا ما ينفعنا وأن يجعل العلم حجة لنا لا حجة علينا، وأن يرزقنا الهدى والتقى والعفاف والغنى، وألا يكلنا إلا أنفسنا طرفة عين؛ فهو حسبنا ونعم الوكيل.

دعائك في ظهر الغيب إحسان والله يحب المحسنين.

لاي استفسار ملاحظه

Mr.M.Sultan   01060693893

Email & Facebook: moh_soultan@yahoo.com

Section One

Questions

Unit One – Lesson1

Motion in One Direction

I) Complete the following statements:

1. The ……………. is defined as the speed of moving object relative to the observer .

2. The total distance that a moving object covers divided by the total time taken to cover this distance is known as ……………….

3. The uniform speed of a car is 90 km/ hour so, its speed equals ………… m/s.

4. When the average speed of an object equals the uniform speed in this case the motion represents …………… motion.

5. The relative speed of moving object depends on ………………..

II) Write the scientific term:

1. The distance that a moving object covers within a unit time. [………………..]

2. The speed in which the object moves to cover equal distances at equal periods of time. [………………..]

3. The speed of moving object relative to the observer.   [………………..]

4. The change in the position of a body by time relative to the position of another body. [……………..]

5. The simplest type of motion.   [……………..]

III) Put (√) or (×) then correct what is wrong:

1. When a moving object covers equal distances at equal periods of time so it moves with uniform acceleration   (   )

2. A car moves with regular speed covers 500 meters in 20 sec. its speed is 200 m/s

3. Average speed is the speed of a moving object relative to the observer   (   )

4. Measuring the relative speed for a moving car depends on the presence of speedometer which determines the speed value.   (   )

5. The relative speed of two moving bodies in the same direction equals the sum of their speed. (   )

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IV) Give reasons for:

1. The moving car seems stable to an observer moves with the same speed and direction.

……………………………………………………………………………………

2. The uniform speed of a car can't be obtained practically.

……………………………………………………………………………………

3. The motion of the trains can be considered as a motion in one direction.

……………………………………………………………………………………

V) Define each of the following:

(1) Speed

……………………………………………………………………………………

(2) Irregular speed

……………………………………………………………………………………

VI) Problem

A runner covered a distance of100 meters to the north in 30 seconds , then 50 meters to the east in 10 seconds , then 100 meters to the south in 15 seconds , then he came back again to the starting point in 5 seconds . Calculate:

1. The total distance covered by the runner.

……………………………………………………………………………

2. The average speed of the runner.

…………………………………………………………………………………

Lesson Two

Graphic Representation of Moving in a straight line

I) Complete:

1. The value of change of an object's speed in one second is ……………….

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2. When an object moves with decelerating motion this means that it's …………. speed is greater than it is ……………. Speed.

3. For a car moves with regular speed , the ratio d / t is ………………

4. The ratio between the final speed and initial speed for an object moves with accelerating motion is ……………. one.

II) Write the scientific term:

1. The graph for a regular motion at uniform speed which is represented by a straight line parallel to the (×) axis.   [……….…………]

2. The change of the object's speed by equal values through equal period of time.   […………………]

 3. The graph for a regular motion at uniform speed which is represented by a straight line passes through – the origin point.   […………………]

III) What's the difference between:

1. Speed – acceleration (Definition – measuring unit)

…………………………………………………………………………………

…………………………………………………………………………………

2. The graphical relation (distance – time) and the graphical relation (speed – time) for regular motion in a straight line at constant speed.

…………………………………………………………………………………

…………………………………………………………………………………

…………………………………………………………………………………

IV) Problem:

- A racing car starts moving from the rest. Then its speed increased to 900 m/s through 5 second.

Calculate the acceleration of the moving car.

…………………………………………………………………………………..

…………………………………………………………………………………..

- A car moves at speed 100 km / h if the driver reduces its speed by a rate of

-2km / h^2 calculate the car's speed after half hour.

…………………………………………………………………………………..

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Lesson three

Physical Quantities Scalars and vectors

I) Complete the following:

1. The …………… is a vector quantity while ………….. is a scalar quantity .

2. ……………… is the covered distance in a constant direction and is a vector quantity.

3. The vector quantity that identifies it a accurately and is necessary to identify it's ………………… as well as ……………….

4. Average velocity =........ ....

II) What's the difference between:

- Distance and displacement (Definition only).

……………………………………………………………………………………

……………………………………………………………………………………

- Scalar quantity and vector quantity (Definition and Examples).

……………………………………………………………………………………

……………………………………………………………………………………

III) What is meant by?

1. The displacement of on object is 60 meters in east direction.

……………………………………………………………………………………

2. The average velocity of a moving car is 80 km / h

……………………………………………………………………………………

IV) When dose the following cases happen:

1. The displacement covered by a moving body equals zero.

……………………………………………………………………………………

2. The distance and displacement of a moving object are equal.

……………………………………………………………………………………

V) Problem:

 1. A tennis ball falls from a height of 30 m. then it rebounds from the ground to upward a distance of 6m. Find the distance covered by the ball and the displacement .

…………………………………………………………………………………………..

………………………………………………………………………………………….

………………………………………………………………………………………….

2. If a body starts its motion from point (a) covered 20 meters northward till point (b) within 20 seconds, then 50 meters eastward till point (c) within 10 seconds then 20 meters southward till point (d) within 5 seconds calculate the average velocity .

………………………………………………………………………………………….

………………………………………………………………………………………….

3. A body moves in a circular path, starting from the point A to B to C to D and returns back to the start point (A) if the circumference of the path is 200 meters and the body covered the distance (ABC) within 10 seconds. Then it covered the distance (CDA) within 20 seconds calculate:

   1) The total distance the body moved.

…………………………………………………………………………………………

   2) The average speed of the body.

…………………………………………………………………………………………

   3) The displacement.

…………………………………………………………………………………………

VI) Give reasons for:

1. Velocity and acceleration are vector quantities. While distance and length are scalar quantities.

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…………………………………………………………………………………………..

2. Pilots take in consideration the velocity of the wind.

…………………………………………………………………………………………..

…………………………………………………………………………………………..

VII) Write the scientific term:

1. The length of shortest straight line between primary position and final position. [………………………]

2. The rate of change of displacement.   [………………………]

3. The vector quantity which is measured in m/s^2.   [………………………]

Unit Two – Lesson one

Mirrors

I) Write the scientific term:

1. The rebounding of light to the same side when it strikes a reflecting surface. [………………………]

2. The angle between the incident light ray and the perpendicular line on the reflecting surface. [………………………]

3. Angle of incidence = Angle of reflection.   [………………………]

4. The point of collection of parallel light rays to the principal axis of the concave mirror. [……………………….]

5. Twice the focal length of a spherical mirror.   [………………….………]

II) Put (√) or (×) in front of the following statements and correct the false ones:

1. The distance between the object and a plane mirror is more than the distance between the plane mirror and the image.   (   )

2. When the angle between the incident ray and the plane mirror surface is 60º, so the angle of reflection is 50º.   (   )

3. The formed image for a body put in front of a convex mirror is virtual, Inverted and small.
(   )

4. A spherical mirror of diameter equals 14 cm , its focal length is 6 cm .(   )

5. The focus is the point that is in the middle of the reflective surface of the mirror.   (   )

III) Give reasons for:

1. Concave mirror is used in cooking by using solar energy.

……………………………………………………………………………………….

2. A convex mirror is put at the left side of the driver of the car.

……………………………………………………………………………………….

3. The incident light ray falling perpendicular on a reflecting surface reflects on itself

……………………………………………………………………………………….

4.   The word AMBULANCE is written in a converted way on the ambulance car.

…………………………………………………………………………………………

IV) Show by drawing the path and the direction of rays in the following cases:

• An object in front of a concave mirror at a distance less than its focal length (Determine the properties of the formed) image.

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…………………………………………………………………………………………

…………………………………………………………………………………………

• The image that is formed by the convex mirror.

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• An object in front of a concave mirror at a distance of 7 cm .Knowing that its focal length is 5 cm.

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V) An object is put at a distance 20 cm from a mirror the image is formed on a screen and has a length equal to the object.

(1) What is the type of the mirror?

…………………………………………………………………………………………

(2) Calculate the focal length of the mirror.

…………………………………………………………………………………………

(3) Draw the path rays that show the formation of this image.

…………………………………………………………………………………………

…………………………………………………………………………………………

Lesson (2) – Lenses

I) Complete the following statements:

1. A point inside the lens placed on the principal axis in the mid distance between its faces is ……………………….

2. The radius of the convex lens = ……………… Its focal length.

3. The long sighted person needs a medical eye glasses with …………. Lenses.

4. The optical piece that forms an equal. Inverted image of the body is the ……….

II) Write the scientific term:

1. The line joining between the two centers of curvature of the lens and passing through the optical center.　　　　　　　[　　　　　　　]

2. A vision defect results due to the formation of the image in front of retina.　　[　　　　　　　]

3. The lenses that are used instead of glasses and can stick to the eye cornea. [　　　　　　　]

4. A disease infects the eye lens, so it becomes dark.　　　[　　　　　　　]

III) Give reasons for:

1. The convex lens has two foci, but the concave mirror has one focus.

…………………………………………………………………………………………

…………………………………………………………………………………………

2. The short – sightedness is treated by using a concave lens .

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……………………………………………………………………………………

3. it's impossible to obtain a real image by using a concave lens.

……………………………………………………………………………………

…………………………………………………………………………………….

4. The convex lens is called converging lens while the concave lens is called diverging lens .

……………………………………………………………………………………

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IV) What happens when?

1. A light ray is incident parallel to the principal axis of the convex lens.

……………………………………………………………………………………

……………………………………………………………………………………

2. The eye lens is too convex.

…………………………………………………………………………………….

3. A light ray passes through the optical center of the lens.

……………………………………………………………………………………

……………………………………………………………………………………

V) Define each of the following:

1. The lens.

…………………………………………………………………………………….

2. The center of curvature of the lens face.

……………………………………………………………………………………

3. Short sight defect. …………………………………………………………………………………………

VI) Problem:

1. A concave lens has a focal length equals 3 cm. An object is placed at a distance of 4 cm. From the lens, determine the position of the formed mage and its properties by drawing the light rays.

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

2. A convex lens. Its focal length equals 5 cm. An object is placed at a distance 7 cm from the lens; determine the position of the formed image and its properties by drawing only two light rays.

………………………………………………………………………………………

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3. Mention the position and properties of the image formed of an object is put at a distance less than the focal length.

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

4. A convex lens with focal length of 20 cm an object was placed at a distance of 40 cm from the lens. Assign the distance of object's image from the lens and mention its properties.

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Unit Three – Lesson 1

The universe

I) Write the scientific term:

1. The sun and eight planets revolving around it.   [……………………]

2. It's located in one of the spiral arms of the Milky way galaxy.   [……………………]

3. It contains all the stars we see at night in the sky.   [……………………]

4. The distance that is covered by light in one year.   [……………………]

II) The scientists have different theories about the history of the universe some of them believe in the opened universe theory. Others believe in the closed universe theory.

- Mention the opinions of both.

……………………………………………………………………………………

……………………………………………………………………………………

……………………………………………………………………………………

III) Give reasons for:

1. Our galaxy is called Milky Way galaxy.

……………………………………………………………………………………

……………………………………………………………………………………

2. The continuous expansion of the space.

……………………………………………………………………………………

……………………………………………………………………………………

3. The gravity has important role in cosmogony of the universe.

……………………………………………………………………………………

……………………………………………………………………………………

IV) Complete the following statements:

1. Each galaxy has a distinctive shape according to ……………… and ………….. of the groups of starts in universe.

2. The solar system is located in one of the spiral arms of …………… galaxy.

3. Within minutes of the Big Bang, the atomic particles merged together producing ……………… and ……………………… .

4. The solar system contains a number of …………… orbit the sun.

5. The sun takes about ……………… million years to complete one rotation around the center of the galaxy.

6. Bigger units of the universe are ………………

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Lesson 2 –The solar system

I) Complete the following:

1. The force of attraction between two objects is ………………… proportional to the product of their masses and is ……………… proportional to the square of the distance between them.

2. The ……………. rotates around the earth in a fixed orbit and …………… rotates around the sun once every earthly day .

3. The scientist who established ……………… theory is Laplace, but the scientist who established the modern theory of the world is …………………….

4. The longest day is on ……………. whereas the shortest day is on ……………

5. …………….rotates around the sun once every 12 earthly years.

II) Write the scientific term:

1. The time taken by the planet to complete one rotation around its axis. [………….………]

2. A flat gaseous round disk that formed the solar system.   [………………….]

3. The force that keeps the continuity of the planets rotation in their orbits around the sun. [………….……….]

4. The planet that has the shortest year on its surface.   […………………….]

III) Correct the underline words:

1. The modern theory for formation of the solar system according to Laplace is due to explosion of a star rotating around the sun.

2. The time of revolving Venus planet around its axis is one Earthly day.

3. The difference of day length from a planet to another is due to the speed of the planet rotation around the sun.

IV) What would happen ………?

1. When the distance between a planet and the sun increases.

…………………………………………………………………………………………

…………………………………………………………………………………………

2. Due to the difference in speed of planet rotation around its axis.

…………………………………………………………………………………………

Explain the evolution of the solar system as the vision of the French scientist Laplace

……………………………………………………………………………………………

……………………………………………………………………………………………

Unit Four – Lesson 1

Cell Division

I) Put (√) or (×) in front of the following statements and correct the false ones

1. The chromosome consists of a nucleic acid called RNA and protein.   (   )

2. In the mitotic division, the spindle fibers are formed during inter phase and disappear in anaphase .
(   )

3. The spindle fibers are formed in the plant cell from the centrosome.   (   )

4. The nucleolus disappears through telophase of mitosis.   (   )

5. Crossing over phenomenon occurs in the anaphase of first meiosis.   (   )

II) Give reason for:

1. Crossing over is the source of genetic variation between members of the same species.

……………………………………………………………………………………………

……………………………………………………………………………………………

2. The nucleus is the part of the cell division.

……………………………………………………………………………………………

……………………………………………………………………………………………

3. Cellular division begins with inter phase .

……………………………………………………………………………………………

……………………………………………………………………………………………

III) Write the scientific term:

1. The point of connection of two chromatids together.   [……………........]

2. It contributes in genes exchanging between the chromosome's chromatids and distributing them in the gametes.   […………………]

3. A phase where some processes occur upon which formation of two cells each of them contains chromosomes that equal in number with the parental cell .   […………………]

IV) If you have a plant that its cells have 20 chromosomes.

What is the number of chromosomes in the following cells?

(1) Leaf   (2) ovum   (3) pollen

(4) Fertilized ovum   (5) stem   (6) zygote   (7) root

Lesson 2 – Sexual and Asexual Reproduction

I) Give reasons for:

1. Spore propagation is a type of asexual reproduction which is common in some fungi such as bread mould and mushroom.

……………………………………………………………………………………

……………………………………………………………………………………

2. The zygote has the same no. of chromosomes of cells of parental organism.

……………………………………………………………………………………

……………………………………………………………………………………

3. Starfish continues alive even a part of its body is cut .

……………………………………………………………………………………

……………………………………………………………………………………

4. Sexual reproduction is a source of the genetic variation .

……………………………………………………………………………………

……………………………………………………………………………………

II) Mention the importance of:

1. The sexual reproduction in concerning of the genetic structure.

…………………………………………………………………………………….

2. Vegetative reproduction.

……………………………………………………………………………………….

III) What would happen?

1. Separating a starfish arm, while it contains a part of the central disc .

…………………………………………………………………………………………

…………………………………………………………………………………………

2. Fusion of sperm with an ovum .

…………………………………………………………………………………………

…………………………………………………………………………………………

IV) How does each of the following organisms reproduces (if it is asexually reproduction mention its type.

1- Sponge ……………………….   2- man …………………………………

3- Bacteria……………………….   4- Hydra …………………………….

5- Bread mould ………………….   6- Paramecium ………………………

7- Starfish ……………………….

 8- Plants (with no need of seeds) …………………………………………………

End of the section of units questions

Go to Exams Section.

Wishing you all good luck

Mr. Mohamed

Section Two

Exams

Exam 1

Q1: Write the scientific term:

1- The value of change of an object's speed in one second.

2- The unit that is used to measure the distances between the celestial bodies.

3- Angle of incidence = Angle of reflection.

4- The shortest straight line between two positions of a moving object.

5- The revolving of the earth around its axis in a period of time.

6- The ability of some animals to compensate their missing parts.

7- Cells that lead to the formation of gametes that contain N chromosomes.

8- Twice the focal length of a spherical mirror.

9- The change of an object's location as time passes according to the location of another object.

10- A type of reproduction which considered a source of genetic variation.

Q2: Complete the following:

1-The genetic material in the nucleus of the cell consists of a number of ………………

2- From the examples of asexual reproduction, budding in ……….. Fungus

3- The chromosomes pairs are arranged in first metaphase in the ……… line of the cell

4- Meiosis cell division occurs in the anther of a flowering plant to produce ……....

5- The solar system is located in one of the spiral arms of ………… galaxy.

6- …………….... rotates around the sun once every 12 earthly years.

7- Within minutes of the big bang, the atomic particles merged together producing ………… and ……………. gases.

Q3: Give reasons:

1-The perpendicular incident light ray on the plane mirror reflects on itself.

2- The continuous expansion of space.

3- The constancy of the Earth's rotation in an orbit around the sun.

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4- A convex mirror is put at the left side of the driver of the car.

Q4: Choose the correct answer:

1- Which of the following graphical relations represents the moving of the body by uniform acceleration?
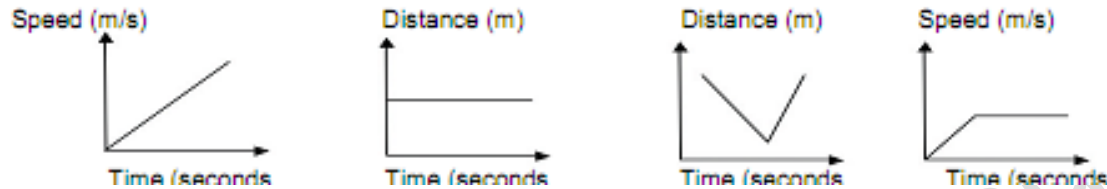
2-simple motion is the motion in $(1 - 2 - 3)$ dimensions.

3-concave mirror is a part of (sphere – triangle – square)

4-radius of curvature of the mirror is (double – half – quarter) of the focal length.

5-Angle of reflection (equal to - larger than – Smaller than) the angle of incidence.

Q5: Compare between long and short sight from the following points:

a- The type of lens used in treatment of each one

b-The cause of each one

Q6: Draw a diagram to illustrate the image formed when the object at a distance more than double focal length of concave mirror.

Q7: Mention an activity to determine the radius of curvature of a concave mirror?

Q8: 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 30seconds then it moves 30meters southward to point c within 10 seconds. Calculate:
1- The total distance covered by the body.
2- The total time taken by the body.   3- the average velocity. 4- The average speed.

Q9: A convex lens with a focal length of 10 cm, an object was placed at a distance of 20 cm from the lens. Assign the distance of the object's image from the lens and mention its properties.

GOOD Luck

Mr.M.Sultan

Exam 2

Q1: Write the scientific term:

1- The point of collection of parallel rays in the concave mirror.

2- A phase in which some important biologogical process occur to prepare the cell for division and genetic material in the cell is doubled.

3- The point that is in the middle of the reflective surface of the mirror.

4- The combination of the male and the female gametes to form zygote.

5- It is the sun and eight planets revolving around it.

6- A flat and gaseous round disk that formed the solar system.

7- A mirror that forms a virtual, upright and small image for an object.

8- It contributes in genes exchanging between the two homologous chromosome's chromatids and distributing them in the gametes.

9- It is located in one of the spiral arms of the Milky Way.

10- A disease causes darkness of the eye lens.

Q2: Complete the following:

1- The longest day is of ………….. Planet, whereas the shortest one is of ……….

2- The incident light ray which is parallel to the principal axis of a concave mirror reflects passing through …………………

3- The chromosome chemically consists of nucleic acid called ………… and protein.

4- The displacement is considered as ………… quantity, while the mass is considered as ………………… quantity.

5- The radius of the concave mirror equals ………… of its focal length.

6- Meiosis division occurs in loving organisms that reproduce by …………..

7- The most important vision defects are ………….. and …………………..

Q3: Give reasons:

1- Sexual reproduction is the source of variation between individuals.

2- The shortsighted person requires medical glasses with concave lenses.

3- Asexual reproduction produces offspring identical to the parents.

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4- A convex mirror is put at the left side of the driver of the car.

5- The shortest year is on mercury planet.

Q4: Choose the correct answer:

1- Which of the following graphs represent the movement of an object at constant speed?
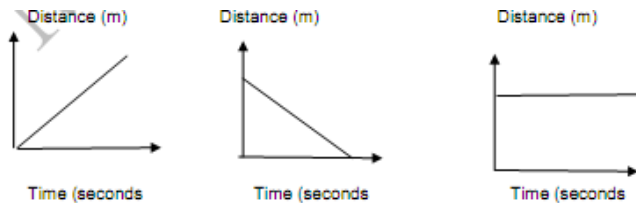
2-The two factors can be used to describe the body motion are:

1- Speed and time   2- distance and time

3- Area and time   4- displacement and speed

3- The value of the speed (v) = d1+d2+d3 ÷ t1+t2+t3 .That means the produced speed is …………………. Speed   1-average   2-increasing   3- nail   4-decreasing

4- A concave lens is placed in the passage of sun rays; a very small image for the sun is formed at a distance 5 cm from the optical centre of the lens, if this lens is used to form an equal image for a body, what is the distance between the body and the optical centers of the lens?

1- 5 cm   2- 10 cm   3- 50 cm   4- 60 cm

5- In which of the following cases the lift rider feels weightlessness phenomenon

1-when the lift ascends upwards with uniform acceleration

2-when the lift ascends upwards with uniform acceleration

3-when the lift descends with uniform velocity

4- When the lift falls

Q5: A race car can move from stationary position and its speed reaches 100 kilometers through 20 seconds. Calculate the acceleration of the car.

**Q6: An object is placed in front of convex lens at distance of 6 cm. knowing that the focal length of this lens is 3 cm. 1- Determine by drawing the position of the formed image
2- Mention the characteristics of such image**

GOOD Luck

Mr.M.Sultan

Exam 3

Q1: Write the scientific term:

1- Asexual reproduction occurs by using plant organs except seeds.

2- The line joining between the two centers of curvature of lens passing by the optical center.

3- It is the phenomenon of the light bouncing off in same medium when it meets the reflecting surface.

4- The angle between the reflected light ray and the normal.

5- The expansion of the universe and the atomic particles merged together producing helium and hydrogen.

6- The space that contains all the galaxies, stars and planets.

7- The image that can't be received on a screen.

8- A phenomenon that occurs at the end of prophase 1 and contributes in genes exchange.

9- A disease resulting from the formation of the image behind the retina of the eye.

10- The biggest star that can be seen clearly by people on the earth surface.

Q2: Complete the following:

1- Speed measuring unit is.................. and the acceleration measuring unit is...

2- The somatic cells divide by .... while the reproductive cells divide by.....................................

3- The crossing over phenomena takes place during ....of the .... division.

4- The stars move in fixed orbits around the centre of the....................................

5- The scientist who founds chaos theory that explains solar system formation is ……………………..

Q3: Give reasons:

1- Interphase stage occurs before starting cell division.

2- The important of the crossing over phenomenon the first meiotic division.

3- Zygote contains the normal number of chromosomes of the organism.

4- The object that is placed at the focus of convex lens does not form an image.

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5- Concave mirrors are used in solar ovens.

Q4: Choose the correct answer:

1-Units of acceleration is (m\s – m\hr – m\s^2)

2-the image formed in the plane mirror is (real, inverted, small – virtual, upright, larger – virtual, equal in the size)

3- If the radius of curvature of the mirror equals 80 cm, so the focal length equals
(160 – 40 – 20) cm.

4- Opposite to a plane mirror you have put an object at distance 5 cm, so the distance between the image and the object is (5 – 10 – 9) cm.

5-velocity = (Displacement \Time – distance \ Time – Displacement ×T).

6-you should mention the (quantity only – direction only – both of them) to describe the scalar physical quantity.

Q5: If the number of chromosomes in a human pancreatic cell is 23 pairs of chromosomes. What is the number of chromosomes in the following cells: -Skin - sperm - fertilized ovum?

Q6: Draw a diagram to illustrate the Image formed in the concave mirror when the object lies at the center of curvature of the mirror.

Q7: Explain relation between the hereditary structure of offspring and parents in the cases of sexual reproduction and asexual reproduction.

Q8: 6-A boy walked 3.0 km [East] then 5.0 km [North]. What was his displacement? With Drawing.

GOOD Luck

Mr.M.Sultan

Exam 4

Q1: Write the scientific term:

1- The moving object covers equal distances at equal periods of time.

2- The change of displacement relative to time.

3- A point located inside the lens on the principal axis in the mid distance between its faces.

4- It contains genetic material from each parent when it grows; it gives a new offspring whose traits combine each parent's traits.

5- It is the change in the object's speed in one second.

6- It is any straight line that passes by the center of curvature of the mirror and any point on its surface except the pole of the mirror.

7- A phase in which chromosomes pairs arrange on cell's equator.

8- The force that keeps the continuity of planets rotation in their orbits.

9- The value of an object's speed determined in relation to an observer.

10- A phenomenon that occurs at the end of prophase 1 and contributes in genes exchange.

Q2: Complete the following:

1- It is impossible to obtain real image by using the ………… lens or plane ……..

2- The spindle fibers are formed during the cell division in ………. And disappear in ………………

3- Amoeba reproduces by ……………, bread mold fungus reproduces by ……….

4- The result of multiplying (a speed of moving object × time) = …………..

5- The cell ………….. contains the genetic material which consists of number of …………………

Q3: Give reasons:

1- The moving car seems stable to the observer moves with the same speed and direction.

2- The convex lens has two centers of curvatures, while the convex mirror has only one centre.

3- The uniform velocity of a car cannot be obtained practically.

4- It is impossible to obtain real image by using concave lens.

5- The focal vertex of the thick convex lens is less than the thin convex lens.

Q4: An ant crawls 11 cm. north; then, 6 cm. east; and finally, 3 cm. south. What is the value of the displacement? With drawing

Q5: Draw a diagram to illustrate the Image formed in the concave mirror when the object lies between the center of curvature of the mirror and the pole.

Q6: Choose the correct answer:

1- An incident ray falls on a reflection surface at angle:

    1- 0   2-90^0 3-180^0 4-30^0

2- if the radius of curvature of a lens equals 20 cm, so its focal equals.

    1-5m   2- 10 cm   3- 20cm   4- 10m

3- the reproduction which considered as a source of genatic variation is a ……………. Reproduction.

    1- Budding   2-vegetative   3- sexual   4-asexual

Q7: A child moves down a hill with an acceleration of 2.82 m/s^2. If her initial speed is 0.0 m/s and her final speed is 15.5 m/s, how long does it take her to travel from the top of the hill to the bottom?

Q8: What is your average speed if you drive a distance of 100 km at a time of 40 h, then the same distance at a time of 60 h?

GOOD Luck

Mr.M.Sultan

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Exam 5

Q1: Write the scientific term:

1- The force of attraction between the masses of two objects is directly proportion with the amount of their masses and inversely with the square of distance between them.

2- The total distance that a moving object covers divided by the total time taken to cover this distance.

3- The point of collection of the parallel rays after being reflected from the concave mirror and can be received on a screen.

4- A phase where some processes occurs upon which the formation of a completeset of chromosomes that equal in numbers with the parental cell.

5- The space that contains all the galaxies, stars and planets.

6- The image that can't be received on a screen.

7- A process in which the living organism produces individuals with hereditary traits different from the parents.

8- The value of change of an object's speed in one second.

9- A cell division that occurs in the somatic cells and results in the growth of the living organism.

10- An equipment was launched to the space, it allows astronomers an opportunity to study the evolution of the universe after the big bang.

Q2: Complete the following:

1- …………….. is the image that can be received on a screen.

2- …………. Is structural unit of the universe and our galaxy is ……………….

3- From types of the asexual reproduction binary fission in ……………… budding as in ……………………

4- The chromosome consists of two connected threads at the Centro mere point, each thread is called ………………….

5- ………. Are divided by meiosis which leads to the formation of …….........

Q3: Give reasons:

1- The difference in the day due to the difference of the planet.

2- The difference in the year due to the difference of the planet.

3- Force and acceleration are vectors physical quantities.

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4- The long sight is treated by suitable convex lens.

5- Starfish continuous alive even a part of its body is cut.

Q4: Match from (A) to (B):

A	B
object between (F) and (P) image is (1)	Smaller , real , inverted ( )
object at (C) image is (2)	Accelerating motion ( )
object between (C) and (F) Image is (3)	Magnified , real , inverted ( )
Units of velocity are (4)	Equal to the object , real ,inverted ( )
object after (C) Image is (5)	Descending acceleration ( )
Speed is increased in (6)	m\s or km\hr ( )
	Upright , virtual ,larger than the object ( )

Q5: Two trains move in two parallel different ways in opposite directions, if the speed of the first train 60 Km/hr and the second moves by speed 10 Km/hr. Calculate the velocity of the first train that observed by passengers in the second train.

Q6: Define each of the following:

1- Crossing over phenomenon   2- the DNA   3- Law of gravitational

Q7: From the following table:

The displacement (m)	10	20	30	40	50	60
The time (second)	5	10	15	20	25	30

1- Represent the relation graphically.
2- Calculate the velocity from the graph.

GOOD Luck

Mr.M.Sultan