

Grade 9

Science

Time - 2 hrs

Name/Index No :

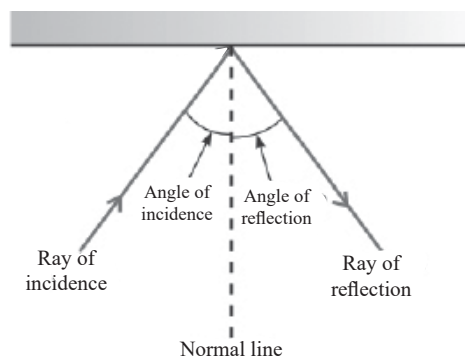
- Answer all the questions.
- Select the most correct or most appropriate answer from the given answers (1), (2), (3), (4) from question no (1) to (30)

Paper - I

Answer all the questions.

- 01) The microbial group belongs to the amoeba is,
i. protozoa ii. Fungi iii. Bacteria iv. Virus
- 02) Which of the following group contains only elements?
i. Copper, Iron, Salt ii. Sulphur, Mercury, Copper Sulphate
iii. Mercury, Carbon, Chlorine iv. Water, Glucose, Argon
- 03) The parts of the human eye, which controls the amount of light entering to the eye is,
i. Iris ii. Pupil iii. Ciliary muscle iv. Eye Lens
- 04) Select the correct statement related to the long sight.
i. Close objects are not seen clearly. Convex lenses are used as remedy.
ii. Distant objects are not seen clearly. Convex lenses are used as remedy.
iii. Close objects are not seen clearly. Concave lenses are used as remedy.
iv. Distant object are not seen clearly. Concave lenses are used as remedy.
- 05) The structure of the human ear belongs to the mid ear is,
i. Tympanic membrane ii. External auditory canal
iii. Cochlea iv. Ear ossicles
- 06) Select the answer which contains the chemical symbols of Sodium, Calcium, Zinc respectively,
i. S, K, Si ii. K, Ca, Zn iii. Na, Ca, Si iv. Na, Ca, Zn
- 07) None of the example for changing the factors affect to the pressure is,
i. sharpening knife blade
ii. having broad stripped school bag.
iii. using shoes with very thin bottom part to skid on ice layers.
iv. making tyres with groves.

- 08) Consider the following statements related to the Big bang theory and Nebula's theory.
- A. These two theories explain about the origin of the universe
 - B. Out of these two theories, most of them today accept the big bang theory.
 - C. These two theories explain that the earth has originated 3.5 billion years ago.
- i. A and B ii. A and C iii. B and C iv. A,B, and C
- 09) The mostly accepted theory, related to the origin of the living organisms is,
- i. Theory of spontaneous generation.
 - ii. Theory of special creation.
 - iii. Theory of bio-chemical evolution.
 - iv. Cosmozic theory
- 10) Select the answer which includes vertebrate animal groups according to the order of their evolution.
- i. Pisces, Reptiles, Amphibians, Birds, Mammals.
 - ii. Amphibians, Pisces, Reptiles, Birds, Mammals.
 - iii. Pisces, Amphibians, Reptiles, Birds, Mammals.
 - iv. Pisces, Amphibians, Reptiles, Mammals, Birds.
- 11) Several statements about the hydrometer are given below,
- A. Calibration of a hydrometer is from top to bottom.
 - B. The level of sinking of a hydrometer is higher in sea water than rain water.
 - C. Different types of hydrometers are used in different purpose in day today life. correct statements are,
- i. A and B ii. A and C iii. B and C iv. A,B, and C
- 12) Masses of equal volumes of marine water, brackish water and fresh water were measured as m_1 , m_2 , m_3 respectively. Select the answer with correct relationship of those masses,
- i. m_1 , m_2 and m_3 are ascending order of masses.
 - ii. m_3 , m_2 and m_1 are ascending order of masses.
 - iii. m_2 , m_3 and m_1 are ascending order of masses.
 - iv. m_1 , m_2 and m_3 are equal.
- 13) Below ray diagram shows the reflection of a light ray by a plane mirror. Consider the following statements.



- A. Angle of incidence and angle of reflection are equal.
- B. The value of ray of incidence angle increases as ray of reflection towards the mirror.
- C. Ray of incidence, ray of reflection and normal line on the same plane.

Correct Statements are,

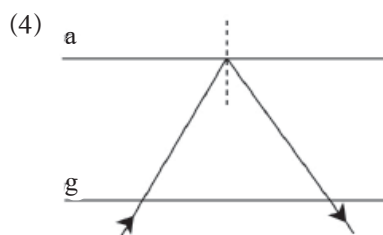
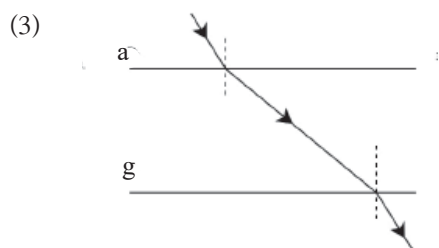
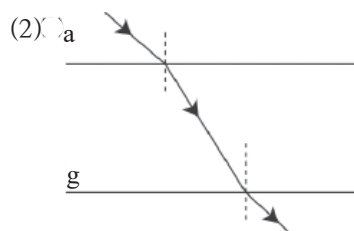
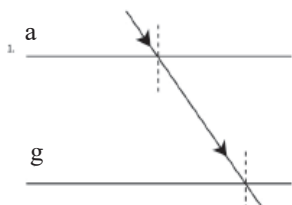
i. A and B

ii. A and C

iii. B and C

iv. All A,B,C

14) Select the correct ray diagram of refraction of a light ray through a glass block.



15) Basic principle of the echo-sounder is,

i. reflection of ultra sound waves.

ii. refraction of light waves.

iii. refraction of sound waves.

iv. refraction of ultrasound waves.

16) Nanometer is,

i. 10^{-3} m

ii. 10^{-6} m

iii. 10^{-9} m

iv. 10^{-12} m

17) The most abundant element used as a nano material is,

i. Carbon

ii. Hydrogen

iii. Silicon

iv. Copper

18) An instance, where lotus effect of nano technology is used in day to day life is,

i. When manufacturing self cleaning paints.

ii. When manufacturing active carbon.

iii. When manufacturing sun protection cream.

iv. When using fuels for motor vehicles.

19) The properties of matter at the nano scale are different. Consider the following statements.

A. Electric conductivity can be changed.

B. Reactivity can be changed.

C. Hardness can be changed.

Correct Statements are,

i. A and B

ii. A and C

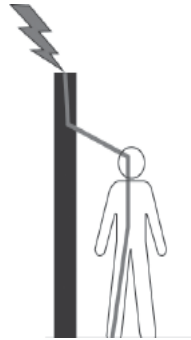
iii. B and C

iv. A,B and C

- 20) When white light ray travels through prism, it separates in to seven colours to form spectrum. Colours of the spectrum according to the correct order is,
- red, green, yellow, orange, blue, indigo, violet.
 - orange, red, green, yellow, blue, indigo, violet.
 - red, orange, yellow, green, blue, indigo, violet.
 - orange, red, yellow, green, blue, indigo, violet.

- 21) This diagram shows,

- Direct strike
- Side flashes
- Contact Voltage
- Step potential



- 22) The instance, which has the highest possibility for lightning accident is,
- Giving first aid to the person shock with lightning.
 - Using cable phones. (land phones)
 - Using mobile phones.
 - lying on the bed.
- 23) None of the factor that affect to the cyclone is,
- Increasing the temperature of a shallow region of the large oceanic area.
 - Occurring convectional currents in the atmosphere.
 - Increasing the wind towards horizontal directions.
 - Developing depression zone on the equator.
- 24) In a structure of a cyclone, the region with heavy rain and fast blowing wind is,
- The central part of the wind called eye.
 - The cluster of cloud around eye called eye wall.
 - The region with spiral clouds.
 - All of above region.
- 25) The reason for occurring earth quake is,
- Releasing energy stored in the earth's crust
 - Releasing magma in the mantle of the earth.
 - Releasing lava from earth's core.
 - Originating new tectonic plates.
- 26) None of the human activity that affect to the occurring of earth quakes is,
- Testing nuclear weapons underneath Earth
 - Drilling Earth to great depths to mine oil and minerals.
 - Erecting dams and constructing large water reservoirs.
 - Fixing seismometers.

27) The reason for the Tsunami occurred at 26th of December 2004 was,

- i. Occurring earth quake at sea bed.
- ii. Volcanic eruption at sea bed.
- iii. Testing nuclear weapons under the ocean
- iv. Falling a large meteors to the ocean.

28) In which of the following medium refraction of can be seen clearly?

- i. Air
- ii. Water
- iii. Glass
- iv. Diamond

29) None of the physical method that can be used to separate components of a mixture is,

- i. Vaporization
- ii. Fractional distillation
- iii. Sifting
- iv. Electrolysis

30) What is the concept described by these pictures according to the green concept?

- i. Generation renewable energy
- ii. Preventing the global warming
- iii. Green Transportation
- iv. All of above



Grade 9

Science - II

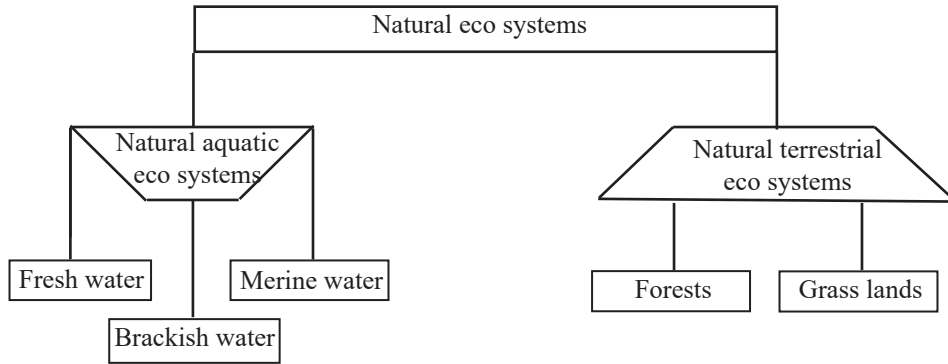
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Paper- II

Answer the first question and 04 more other questions.

- (01) A. Sri Lanka is a country with a rich bio-diversity. Because Sri Lanka has different eco systems. Eco systems in Sri Lanka can be categorized as follows.



- Write an example for each fresh water, brackish water and marine water eco systems.
 - What the type of forest in Sri Lanka with following features. write an example for that type of a forest .
 - Rainfall spread throughout the year.
 - Located in areas with an elevation up to 900m
 - A canopy structure can be seen.
 - Name two types of grasslands in Sri Lanka
 - Threats to the bio diversity can be categorized as natural reasons and human activities.
 - Name a species of extinct animal from the world due to natural reasons.
 - Mention harmful effect occurs to the environment due to human activities.
 - Name two manmade eco-systems.
 - Green concept was introduced to minimize the damages occur to the environment.
 - Accordingly what is the most suitable type of energy source for the future?
 - Write a strategy that can be taken in the domestic level, to the water management.
- B) Micro-organisms are very important to maintain the balance of the environment. Decomposition of dead plants and animal bodies is one of the major role of micro organisms.
- Name a group of micro-organisms contributed for the decomposition process.
 - Name a domestic industry that can be implemented by the decomposition process of micro-organisms.
 - Name the nitrogen fixing bacteria lives in root nodules of legumes plants.

- (02) (A) Atomic number is the number of protons in the nucleus of an atom. Mass number is the sum of number of protons and neutrons. Accordingly fill in the blanks of following table.

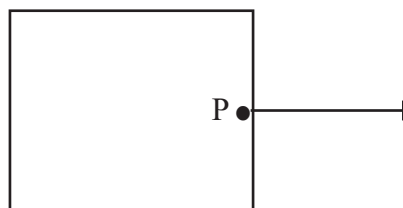
| Element | Atomic number | Number of electrons | Mass Number | Mass Number |
|----------|---------------|---------------------|-------------|-------------|
| Nitrogen | 7 | 7 | 7 | (I) |
| Oxygen | 8 | 8 | (II) | 16 |
| Fluorine | 9 | (III) | 10 | 19 |
| Sodium | (IV) | 11 | 12 | 23 |
| Chlorine | 17 | 17 | (V) | 35 |

- B) i. Name an element that form homo atomic molecule.
 ii. Write the symbol of above homo atomic molecule.
 iii. Name the following chemical compounds.
 i) H_2O
 ii) CO_2
 iii) $\text{C}_6\text{H}_{12}\text{O}_6$

- (03) Bellows diagram shows a representation of a certain force.

What are the components of the force represented by following features of the simple line.

- a) Length of the simple line.
 b) Arrow head on the simple line.
 c) The point named as P.
 ii. Why does force consider as vector quantity?
 iii. Pressure is the perpendicular force exerted on unit of area.



- a) Write an equation to shows the relationship of pressure (P), perpendicular force (F) and surface area (A)
 b) What is the basic unit of measuring pressure?
 c) Write another way of above unit that used to measure the pressure.

- (04) (A) According to the rigidity of the plant, we can divide plants in to two groups.

- a) Plants with woody stem.
 b) Plants with non- woody stem.
 i. Out of above two types plants, in which type of plant contains the highest moisture content?
 ii. Write an example for above (i) you mentioned type of plant.
 iii. In other plants, what is the material contain in plant stem for the it's mechanical strength?
 iv. Write an example for above (iii) you mentioned type of plant.

(B) Movement of plants can be classified as follows,

a) Tropic movements

b) Nyctinastic movements

- i. Growth of a plant roots towards the earth, which type of a movement?
- ii. What can you say about the growth of the plant in above movement?
- iii. a) Name a plant movement which related to the occurring of day and night.
b) Write an example for above (a) type of plant movement.

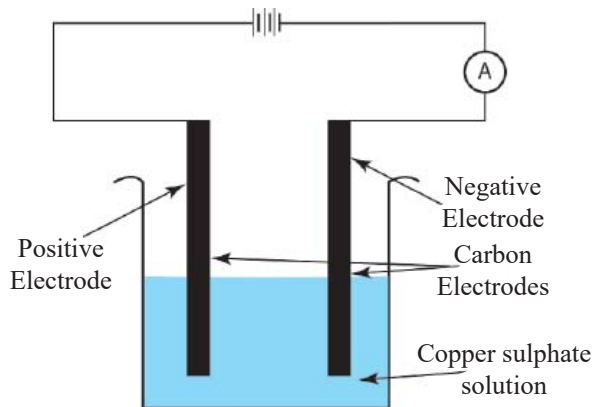
(C) Which of the body parts of following animals are used to make their movements?

a) Invertebrate animals

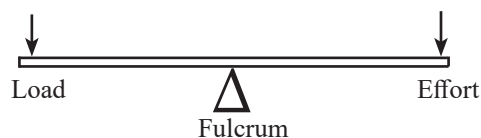
b) Vertebrate animals

(05) Below diagram shows electrolysis process of copper sulphate solution,

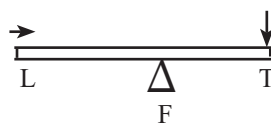
- i. What is the observation that proves the flow of electric current through this copper sulphate solution?
- ii. On which electrode reddish brown substance gets deposited?
- iii. What is that reddish brown substance?
- iv. What is the changes occur in the copper sulphate solution during the electrolysis process?
- v. What are the simple products of an electrolysis process of water?
- vi. Name an instance of using electrolysis process in day today life.



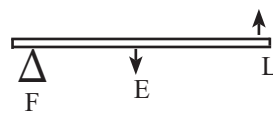
(06) (A) Below shows main parts of a lever.



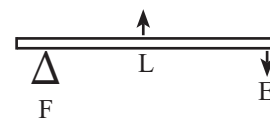
i. Write the order of the following levers.



(A)



(B)

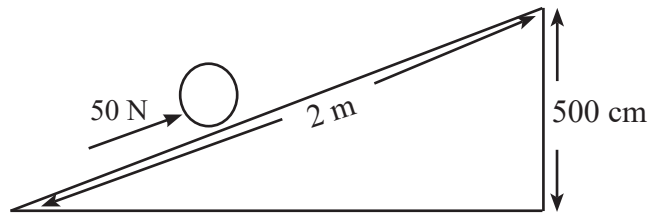


(C)

ii. Write an example for each of above 03 orders of levers separately.

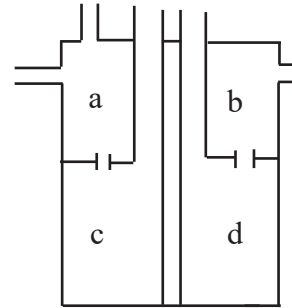
B) Below figure shows the way of carrying gas cylinder to the higher elevation. Length of the below inclined plane is 2m and vertical height is 500cm. Weight of the gas cylinder is 150N and applying force is 50N.

- Calculate the mechanical advantage.
- Velocity ratio is 4. Calculate the efficiency of inclined plane.



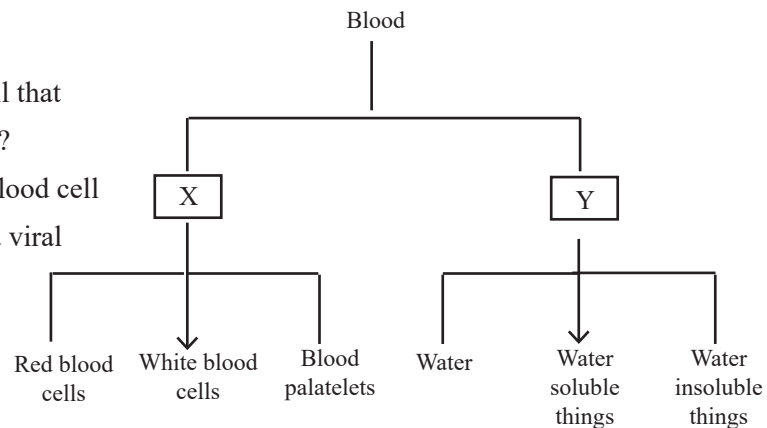
(07) (A) Below diagram shows the vertical section of a human heart.

- What is the chamber of heart that represented by letter “a”
- Name two blood vessels which carry blood towards “a”
- Name the chamber of heart named as “d”
- Name the artery started from “d”



(B). Composition of blood can be shown as follows.

- Name X and Y
- What is the blood cell that contains hemoglobin?
- What is the type of blood cell rapidly decrease in a viral affection?
- Name 02 viral diseases.



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