

10. Two characteristic features of gems are

- 1) Hardness and high refractive index.
- 2) Colour and not resistant to worn out
- 3) High refractive index and expensiveness
- 4) A mineral which is able to obtain naturally

11. Select the answer which contains correct plant movement and relevant example ?

	Type of movement	Example
1)	Photonastic movement	Blooming of flowers with the sun rise
2)	Positive phototropism	Growth of root towards sun light
3)	Nyctinastic movement	Shrinking of mimosa leaves when touched
4)	Positive geotropism	Growing the tip of plant away from gravity

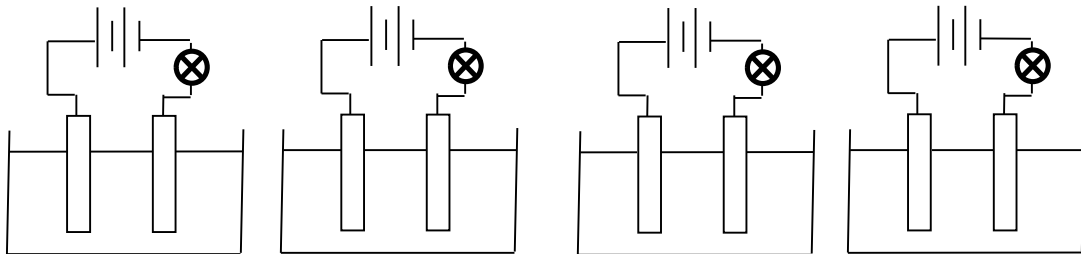
12. Three statements expressed by 03 students regarding the micro organisms are given below.

- A. Can not observe through naked eye when taken individually.
- B. Unicellular organisms.
- C. Include multicellular organisms as well.

The correct statements are

- 1) A and B only
- 2) A and C only
- 3) B and C only
- 4) A, B and C

13. The diagram shows four set up used to identify electrolytes and non electrolytes



- A. Distilled water
- B. Salt solution
- C. Kerosine oil
- D. Acidulated water

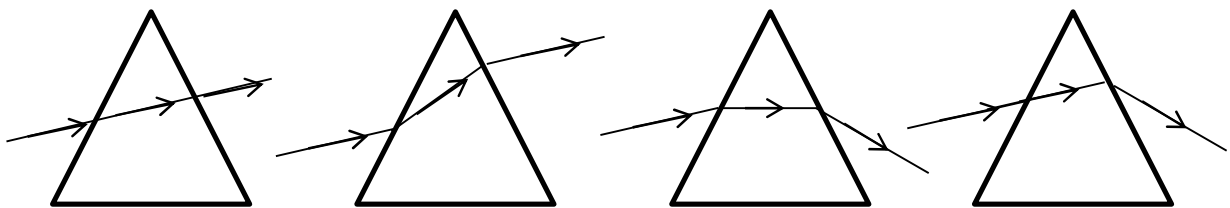
In which set ups, the bulb glows

- 1) A and B only
- 2) A and C only
- 3) B and C only
- 4) B and D only

14. 3000 N weighted object has kept on a surface. The surface area of it is 2 m². What is the pressure exerted by the object on the surface.

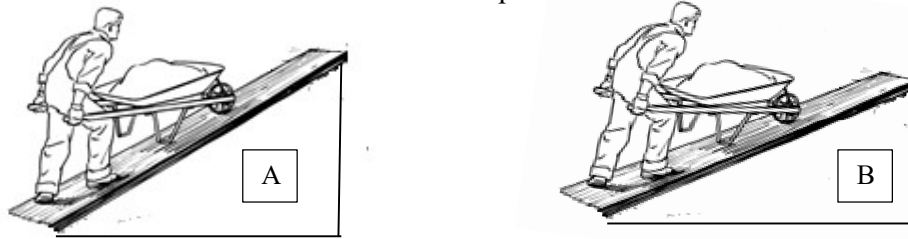
- 1) $\frac{2}{3000}$ Pa
- 2) $\frac{3000}{2}$ Pa
- 3) 3000 Pa
- 4) 3000 x 2 Pa

15. In a student activity, a thin beam of light was projected to a prism and the path of the light beam after refraction was drawn correctly. What would be the correct diagram drawn by the student.



- 1)
- 2)
- 3)
- 4)

16. The diagrams shows two situations where pushing the substances with equal weights using the same wheel barrows on an inclined wooden plank.



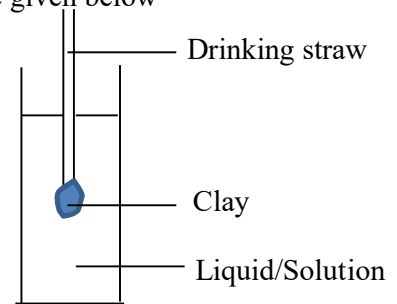
Select the correct statement regarding the force should be applied to push the wheel barrow

- 1) Force applied in A situation is high and B situation is low.
 - 2) Force applied in A situation is low and B situation is high.
 - 3) Forces applied in both situations are equal to the weight of substances and the wheel barrow.
 - 4) Forces applied in both situations are equal to the loaded weights.
17. In an experiment done by a student, a hydrometer was made by using a straw and some amount of clay and immersed in water, kerosene oil and sea water. The statements of four students regarding the amount immersed in liquids before the experiment are given below

- A. It sinks more in kerosene oil.
- B. It sinks less in water.
- C. It sinks less in sea water.
- D. It sinks more in sea water.

The statements confirmed from the observations are.

- 1) A and B only
- 2) A and C only
- 3) B and D only
- 4) C and D only



18. Followings are some statements introduced by students regarding the building of a house using green concept.

- A. Decrease the artificial materials and increase the amount of wood.
- B. Develop the methods to obtain natural sun light
- C. Increase the amount of ventilation holes ensuring the protection
- D. Fixing solar panels to the roof to obtain power

Correct statements are

- 1) A and B only
- 2) B and C only
- 3) C and d only
- 4) B,C and D only

19. followings are fours facts presented by a student as methods to prevent the decaying of timber

- A. Prevent the entering of moisture in to timber
- B. Seasoning timber
- C. Usage of wood preservatives.
- D. Scratch the fungus which grows on timber .

The correct statements are

- 1) A and B only
- 2) B and C only
- 3) C and D only
- 4) B,C and D only

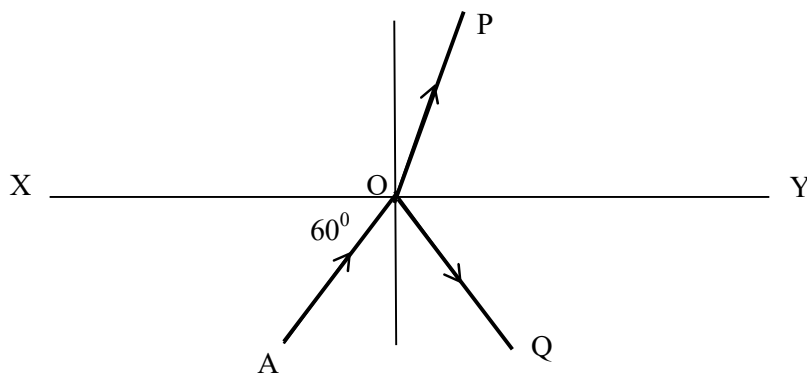
20. Select the correct statement regarding lightning.

- 1) Harm can not be prevented, since it is a natural disaster .
- 2)Can minimize the harmful effects to the lives and properties by following protective measures
- 3)When staying out side during lightning, can protect by laying down on the ground
- 4)When touching a person affected by lightning, should follow protective measures

- First question is compulsory. Answer any other four questions too (Use a separate paper to write the answers)
- 16 marks for first question and 11 marks for each other question.

01. (A). Following are the steps of an activity done by a student to investigate the reflection and refraction of light

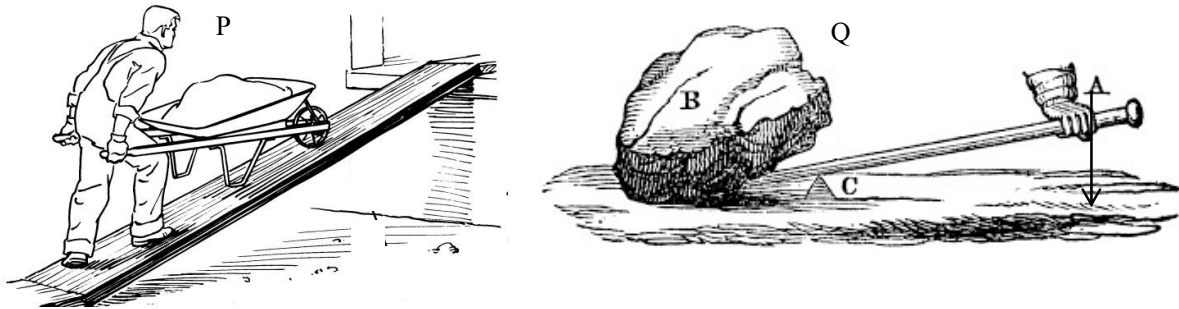
- Drawing a straight line as XY and mark a point as O.
- Drawing a straight line as AO inclined to the XY.
- Drawing the reflected ray by keeping a plane mirror on XY and projecting a laser beam through AO.
- Drawing the perpendicular line to the XY at the point O.
- Remove the plane mirror and keep a glass block on XY.
- Projecting a laser beam through AO and draw the refracted ray.
- Mark the above information as follows.



- Supply the following information using the letters given in the diagram. Use two letters to indicate a ray (03)
 - Incident ray
 - Reflected ray
 - Refracted ray
 - If the angle formed by AO to the plane mirror when kept on XY line is 60° , Find the value of incident angle and reflected angle (02)
 - Write two laws of reflection(02)
 - Indicate two types of reflection when a plane mirror and a white paper were placed on XY line and a parallel beam of light was projected. (02)
 - Write two features of the image formed, when you observe yourself through a plane mirror (02)
- B. Light and the sound are subjected to reflection. Echo and reverberation are due to reflection of sound.
- What is the incident caused by reflection of sound when an obstacle is placed at 20m distance.01)
 - Write two examples for incidents where echo is made useful by human (02)
 - Write two methods to prevent reverberation. **(Total marks 16)**

02.

A. The methods used to make the works easy are known as simple machines. The P and Q diagrams indicate the instances of using the simple machines “levers”.



- Indicate the parts A,B and C in the Q type of lever (03)
- Indicate whether the use of Q is easy, when the place of applying force is moved towards C or away from C (01)
- Name the types of levers indicated by P and Q. (02)
- Name the type of simple machine not belong to levers indicated in the diagram P (01)

B. Nano technology is considered as the fifth industrial revolution. There are many natural incidents based on Nano technology..

- How many parts of a meter is considered as a Nano meter(01)
- The water drops will not retain when put on to a Alocasia (habarala) or lotus leaf. How this incidence is defined?(01)
- Name a product manufactured using the property of not retaining water on a surface. (01)
- Name the Nano type materials which absorb harmful materials in water and purify the water?(01)

(Total marks 11)

03.

A. According to the scientific data collected, there is a trend to occur certain natural disasters in the recent history

- Name the natural disaster according to the following informaion(02)
 - Occur due to pressure depression in the atmosphere.
 - A trend to occur close to the tectonic plates.
- Majority accept that, the reason for natural disaster is global warming. Name a factor responsible for global warming (01)
- Write a step to minimize global warming. (01)

B. Lightning threat is also a natural disaster.

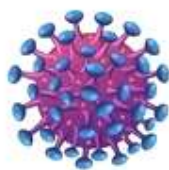
- Name three types of lightning based on the method of discharging the charges in clouds(03)
- What is the reason for the occurrence of thunder with a huge sound during lightning ? (01)
- What is the method used to prevent the damages to tall buildings caused by lightning ? (01)
- When you are staying at home during lightning, write an action which should be done and which should not be done to prevent accidents. (02)

(Total marks-11)

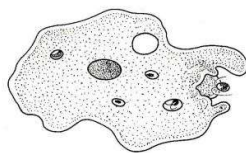
A. There are unicellular, multicellular, living and non living groups among microorganisms. According to the characteristics, the microorganisms can be grouped. Followings are some diagrams of microorganisms..



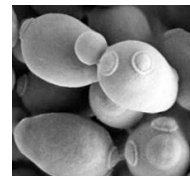
Chlamydomonas
P



HIV
Q



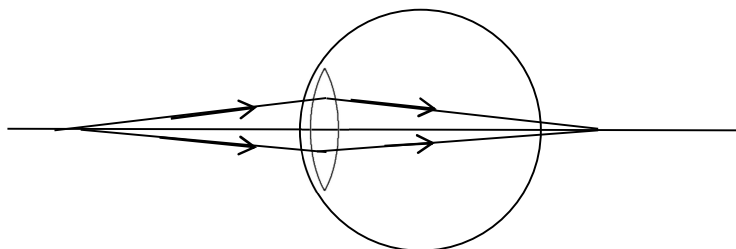
Amoeba
R



Yeast
S

- i. Name the groups of microorganisms indicated as P,Q, R and S (02)
- ii. Write the letter of the organism relevant to following information.
 - a. Multiply only in living cells, no cellular organization . (01)
 - b. Used for bakery products. (01)
- iii. Name two harmful effects of microorganisms.(02)
- iv. Name a method of using microorganisms productively in following fields.
 - a. Medical field (01)
 - b. Agricultural field (01)

B. Eyes give the sense of vision. Although eye defects cause weakness of the vision, can be cured and obtain a clear vision by using lenses. The diagram shows how light enters in to the eye due to a certain defect.



- i. What is the name of the above eye defect? (01)
- ii. Which types of lenses are used in the spectacles to cure the above defect? (01)
- iii. Draw the diagram to show, how the above defect is corrected using the above lens . (01)

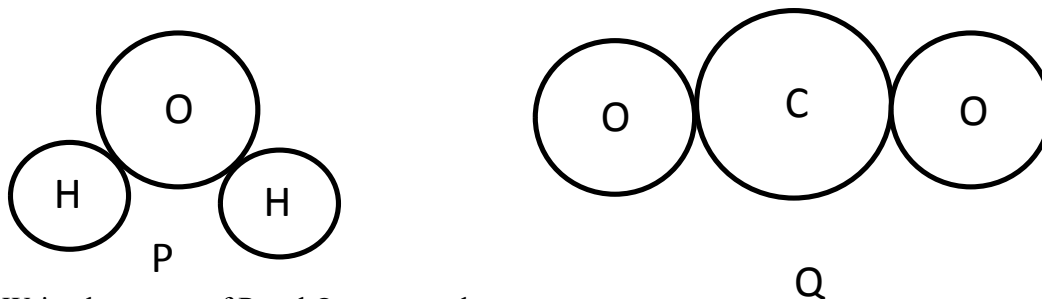
(**Total marks 11**)

05. A. A student had supplied following things for an activity

Pure sand	Water	Salt	Kerosine oil	Petrol
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- i. Indicate whether homogeneous mixture or heterogeneous mixture is obtained when the substances are mixed in following forms.(02)
 - a. Salt and kerosene oil
 - b. Kerosene oil and petrol
- ii. Write the steps of the method used to separate salt and sand from a mixture contain salt and sand. (02)

B. P and Q diagrams shows how atoms are connected in two molecules.



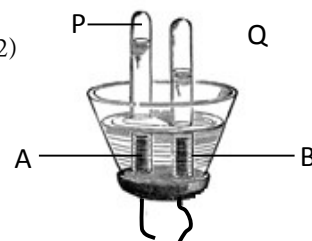
- Write the names of P and Q compounds. (02)
- Indicate the P and Q compounds using formula. (02)
- Name two elements which are present in copper sulphate but not present in P and Q compounds (01)
- O is a neutral element. If the number of electrons and neutrons are 8
 - what is the atomic number of element O? (01)
 - what is the mass number of element O?(01)

(Total marks- 11)

06.

A. Following is a setup used to electrolyze acidulated water

- Identify anode and cathode and indicate with symbols .(02)
- Name the gases collected in the P and Q test tubes respectively.(02)
- Explain in brief, how P and Q gases are identified. (02)
- If acidulated water is replaced by copper sulphate solution, write the observations at A and B electrodes.(02)



B. Although human blood is seen as a red colored fluid, it contains both solid and liquid components. Solid component is known as corpuscles.

- what is the name of the liquid component of blood ? (01)
- what is the corpuscle which transport oxygen through the body ?(01)
- Name the corpuscle which perform the protective action in the human body (01)

(Total marks-11)