யா/ஹாட்லிக் கல்லூரி,பருத்தித்துறை.
J/ Hartley College, Point Pedro.

முதலாம் தவணைப் பரீட்சை–2020 – தரம் 11
First Term Examination – 2020 – Grade 11

SCIENCE	34	E	I, II	இரண்டு மணித்தியாலங்கள் Two Hours

சுட்டெண் Index No

Science

Part - I
Answer all of the following question

01. Muscle is meant by,

1. Cell 2. Tissue 3. Organ 4. Organ System

02. Which of the followings more contributes for existing of organism,

1. Water exist as in three physical state
2. There are different layers found in the atmosphere
3. Organisms show diversity
4. Organisms engage in respiration

03. Which of the following is not a scalar quantity,

1. Distance 2. Displacement 3. Pressure 4. Work

04. Which of the followings having polarity character is,

1. CH_3CHO 2. CCl_4 3. CO_2 4. CH_4

05. The factor for dispersion of the seeds as shown in the given picture,

1. Wind 2. Animal
3. Explosive mechanism 4. Water

06. Which of the followings can produce the food with using sunlight,

1. Mushroom 2. Chlamydomonas 3. Mucor 4. Plasmodium

07. Relative molecular mass of calcium oxide is 56. According to this, Which of the following statement is true,

1. Mass of one molecule of calcium oxide is 56g.
2. One mole of calcium oxide consists of 56 number of calcium oxide molecules.
3. Mass of fifty-six number of molecules of calcium oxide is 6.022×10^{23}g.
4. 56g of calcium oxide consists 6.022×10^{23}g number of calcium oxide molecules.

08. Which of the following molecule has four single covalent bonds,

1. CI_2
2. NH_3
3. CO_2
4. H_2O

09. The excretory organs found in a human body is/are,

1. Skin
2. Kidney
3. Lungs
4. All of the mentioned above.

10. Consider the statements given below, which are the processes are related with plants,

A – Plants exhale carbondioxide gas only in night time.

B – Plants exhale oxygen gas and carbondioxide gas during the daytime.

C – Exchange of gases mainly occurs in the leaves through stomata.

D – Gases interfere in the leaves, defuse to the cells through intercellular spaces.

The true statements are among the statements given above,

1. A and B only.
2. B and C only.
3. B, C and D only.
4. A and C only.

11. Gravitational acceleration on the earth is $10ms^{-2}$. Gravitational acceleration on the another planet is 1/5 than that of the earth. Time taken for achieving the highest distance in this planet with an object thrown $60ms^{-1}$ upward.

1. 4s.
2. 6s.
3. 15s.
4. 30s.

12. Which of the following deficiency of the vitamin causes for beriberi disease,

1. Vitamin A
2. Vitamin B
3. Vitamin C
4. Vitamin K

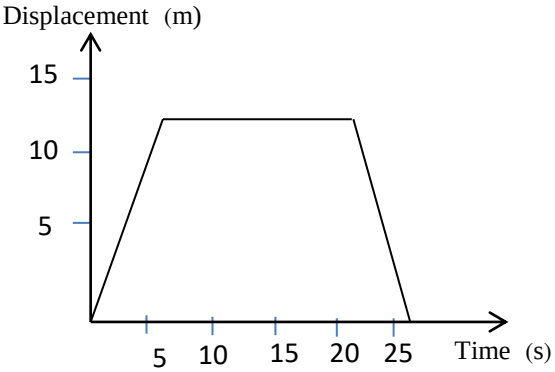
13. In which of the part of the female reproductive system fertilization occurs in reproduction of man,

1. Vagina 2. Womb 3. Fallopiantube 4. Ovary

14. Concentration of the solution obtained with dissolving of 53g of sodium carbonate in 250cm^3 volume of distilled water, (Va -23 , H – 1 , C – 12 , O - 16)

1. 0.5 moldm^{-3} 2. 1.0 moldm^{-3} 3. 1.5 moldm^{-3} 4. 2.0 moldm^{-3}

15. Motion of an object within 25 seconds is shown in the graph given as displacement time. Select the correct statement which is related with motion of the object.



1. Deceleration of the object is 3ms^{-2}.
2. Displacement of the object is zero.
3. Acceleration of the object is 1.5ms$^{-2.}$
4. Object achieves 15m as displacement within 25s.

16. Tissue which causes for increasing the length of the roots of plants is,

1. Lateral meristems 2. Intercalary meristems
3. Parenchyma tissue 4. Apical meristems

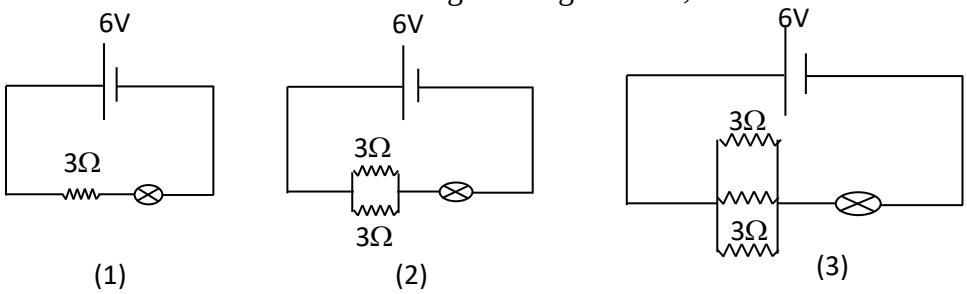
17. The balanced chemical equations of the reaction for decomposition of potassium chlorate is given below,

$2KClO_3 \rightarrow 2KCl + 3O_2$

According to this, how many moles of potassium chlorate should be decomposed for getting 6 moles of oxygen gas,

1. 1 2. 3 3. 4 4. 6

18. Circuit which contains then bulb with highest brightness is,



1. Instance 1 2. On the instance 2
3. On the instance 3 4. On the instance 2 and 3

19. Consider the substances given below,

A – Solid calcium chloride crystals.

B – Fused calcium chloride solution

C – Aqueous solution of glucose.

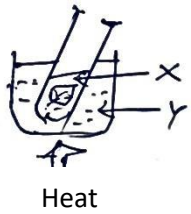
Substances that can conduct electricity is/are,

1. A only. 2. B only. 3. A and B only. 4. B and C only.

20. Which of the substances X and Y are suitable for a step of the starch test as shown in the picture.

1. Water, Saltsolution 2. Saltsolution, Pure water

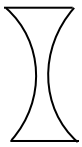
3. Alcohol, Water 4. Water, Alcohol



21. In which of the following optical instruments real and virtual images can be obtained,

1. 

2. 

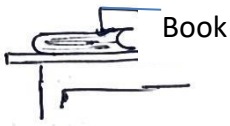


4. 

22. Which of the followings is an example for species of medusa,

1. Hydra 2. Sea anemone 3. Jelly fish 4. Star fish

23. Pressure exerted with the book on the table as shown in the picture having surface of front cover and mass as $6 \times 10^{-2} m^2$ and 500g respectively in Pa,



1. 50.50 2. 63.00 3. 70.50 4. 83.33

24. The total resistance of a circuit made up with connection of 12V source of electricity with flowing current as 0.05A is,

1. 40Ω 2. 100Ω 3. 180Ω 4. 240Ω

25. Form of storage of excess starch in the animals is,

1. Cellulose 2. Sucrose 3. Glycogen 4. Lactose

26. Which component composed as large amount in urine of a healthy person,

1. Water 2. Uric acid 3. Urea 4. Salts

27. Which of the following is a polymer that consists carbon, hydrogen and sulphate,

1. Teflon 2. Vulcanized rubber 3. Polythene 4. Cellulose

28. In which instances the resistance of a circuit is reduced,

1. In the conductor with less cross sectional area
2. Temperature of the resistance increases
3. Falling of light on the light depending resistor
4. Length of the resistor increases

29. Select the correct statement of the followings,

1. Fractional distillation method is used to separate the components of air.
2. Solvent extraction method is used as large-scale to separate cinnamon oil.
3. Fractional distillation method is used to separate oil and arishta.
4. Chromatography is used to separate the volatile components in a mixture.

30. Complete combustion reaction of C_2H_6 is as follows,

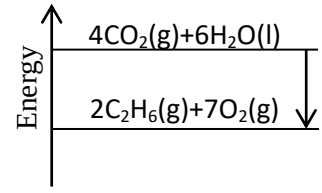
$2C_2H_{6(g)} + 7O_{2(g)} \rightarrow 4CO_{2(g)} + 6H_2O_{(l)} + XKJ$

Mass of water formed when 1 mole of ethane undergone with complete combustion reaction is,
(C – 12 , H – 1 , O – 16)

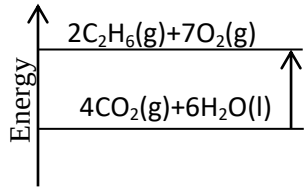
1. 9g 2. 18g 3. 36g 4. 54g

31. Which of the following is a correct energy level diagram for a complete combustion reaction of ethane,

1.



2.



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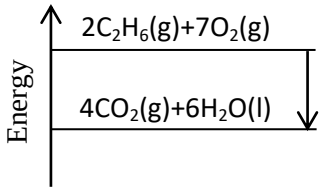

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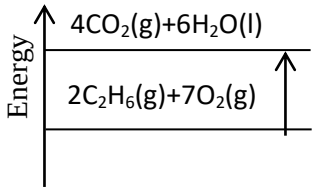


32. Which of the followings is the reason for swimming in sea water as easier than that of river water,

1. Up thrust exerted with river water is less.
2. Up thrust exerted with sea water is high.
3. Amount of displaced water in river water is less.
4. Amount of displaced water in sea water is less.

33. Sharpness of a sound when length of vibrating column of air decreases,

1. Doesn't change
2. Decreases
3. Increases
4. First decreases and then increases.

34. Purpose for using coke when iron separated is,

1. Increases temperature of the furnace.
2. Remove the wastages from the iron ore.
3. Obtaining iron as reduced iron from the iron ore.
4. Decreases the melting point of iron.

35. The gas which participate morely for increasing temperature of the atmosphere,

1. CFC gases
2. NO_2 gas
3. CH_4 gas
4. CO_2 gas

36. True statement about the species ${}^{23}_{11}Na^{+}$, and ${}^{24}_{12}Mg^{2+}$ is,

1. Number of protons of both is same.
2. Number neutrons of both is same.
3. Number of electrons of both is same.
4. Number of protons of both is bigger than that of neutrons.

37. Which of the following factors determines the pressure excited on the surface of the container with certain level of water,

1. Volume of water
2. Density of water
3. Surface area of the base of the container
4. Shape of the vessels

38. Which of the following organisms is not a unicellular organisms,

1. Chlamydomonas 2. Amoeba 3. Acetobactor 4. Plasmodium

39. A method for separating the component in which boiling point as not achieved is,

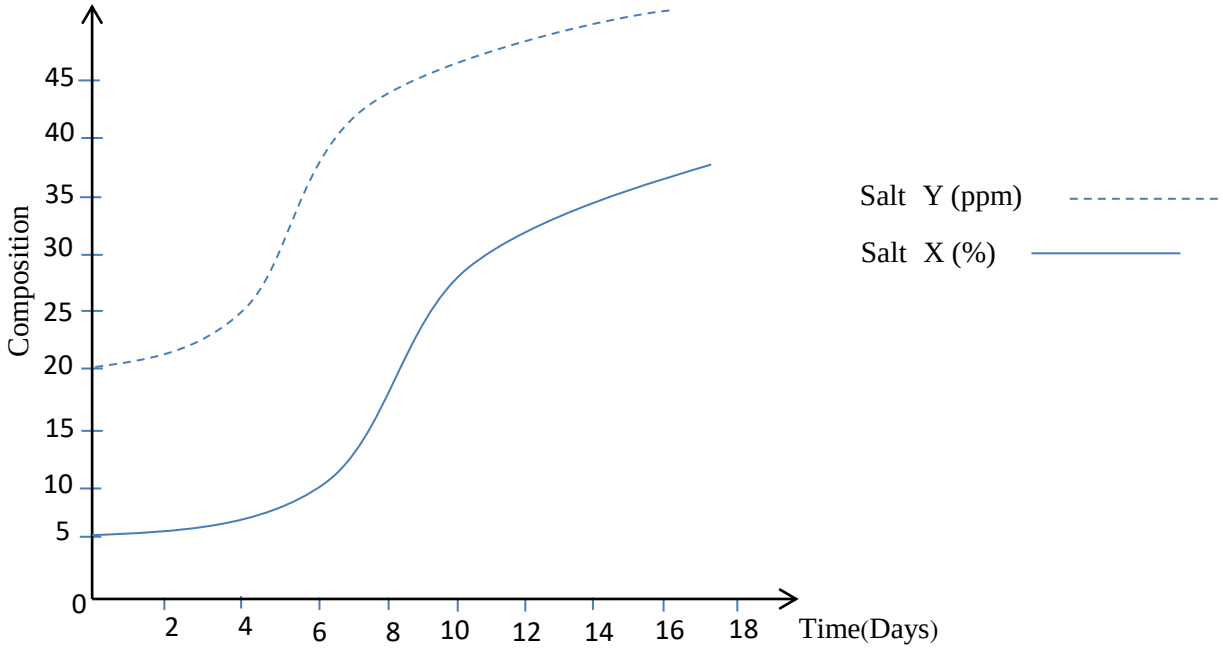
1. Evaporation
2. Simple distillation method
3. Fractional distillation
4. Steam distillation method

40. Which of the following optical instrument method that used for keeping security in the shops is,

1. Plane mirror 2. Convex lens 3. Convex mirror 4. Concave mirror

Structured Questions

Part II



1. When a salt solution is evaporated the variation of the composition of the X and salt Y are shown in the given graph.

i. Give the composition of the salt X on the 6th day in the salt solution.

……

ii. Give the composition of the salt Y in the 4th day in the salt solution.

……

iii. What is the mass of the salt X on the 6th day in 200g of the salt solution.

……

iv. If the density of the salt solution is 2.0gcm^{-3} then, find the composition of the salt X in rn/v fraction.

……

v. Give one instance in our daily life where the above process used.

……

vi. What do you mean with vaporisation process

……

vii. Give one of the feature which differ from the above process and vaporisation process.

……

02. A.

i. Define the terms resultant force.

……

ii. Find the resultant force as shown in the picture.

……

iii. Indicate the point of application of the resultant force with redrawing the picture.

……

……

iv. Define the terms "kinetic Energy" and write the mathematical expressions (equation) for kinetic energy of an object with identification of the quantities.

……

……

……

B. There is a water tank having dimension as length, breadth and height 4m, 3m, and 2m is filled with water as shown in the picture. (Density of water $1.2gcm^{-3}/1200kgm^{-3}$)

i. Find the pressure exerted on the bottom of the water tank with water in Pa.

……

……

ii. Find the force exerted on the surface at the bottom of this water tank.

……

……

iii. Identity the energy type stored in this water tank. What is the value of this energy.

……

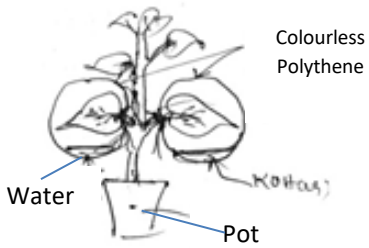
……

iv. Find the power of the water pump when 5s taken for filling water in the water tank as shown in the picture in W.

……

……

03. A. A setup prepared by a student to study a factor which as essential for photosynthesis is shown in the picture. This setup was kept at darkness for 48 hours and under sunlight. Later the leaves covered with polythene sheets more undergone for test of starch.



i. Which of the factor needed for photosynthesis is tested with using this setup.

……

ii. What is the reason for the setup kept for 48 hours under darkness.

……

iii. During starch test, write the colour of the following parts of leaves.

a. Leaf covered with colourless polythene bag with water

……

b. Leaf covered with colourless polythene bag with $KOH_{(aq)}$

……

B. Plants do reproduction with two main different methods.

i. Give the above two main types of reproduction and briefly explain them.

……

……

ii. Give four examples each of the above methods of reproduction of plants.

……

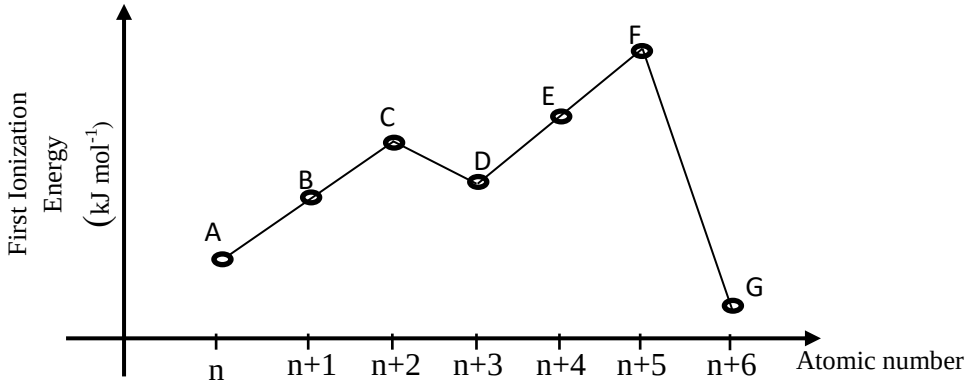
……

iii. Explain the cross pollination process and give an adaptation for each of coconut and orchid for performing cross pollination.

……

……

04. Consider the graph given and answer the followings.



i. What do you mean with first ionization energy of an element.

……

……

ii. Give the possible group numbers for the elements A and C.

……

iii. How does ionization energy change from the element A up to F.

……

iv. Compare the values of ionization energy of the elements A and F. Give the reason.

……

……

v. Which type of bond formed between the elements B and E. Draw the dot-cross diagram for showing this type of bond.

……

……

……

vi. If the element is found as a solid yellow in colour. Then, Write the atomic numbers and electronic configurations of these elements.

……

……

Part – II – B

Answer only three questions among the questions 5,6,7,8

05.

A. In figure 1 rough sketch of a cell of the organism is shown

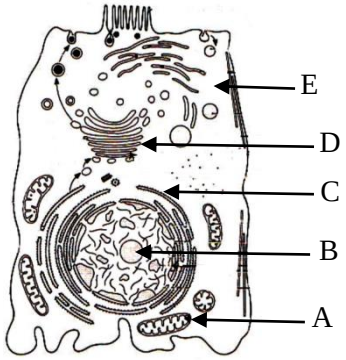


Fig. 1

1. Identify the type of cell given. Give one feature used for identification
2. Name the part A and give the main function of it
3. Give the alphabet for the part which related on synthesis of chromosomes and give two functions of chromosomes
4. Identify the Part B and mention the main function of it?
5. Identify the tissue shown in fig II and mention two characteristics of it.
6. Mention the two type of cells composed for the above tissue and give each of the two parts of plant which contain these cells separately
7. What is the name of the tissue shown in the fig III. Give 2 organs of animals where this tissue is found.
8. Give the two characteristics of the tissue shown in fig III
9. Mention the type of cell of nerve shown in the figure IV and give 02 main parts of it
10. Give the other two types of cells of nerve except the above.

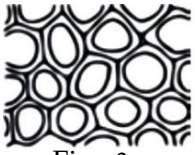


Fig. 2

Fig. 3

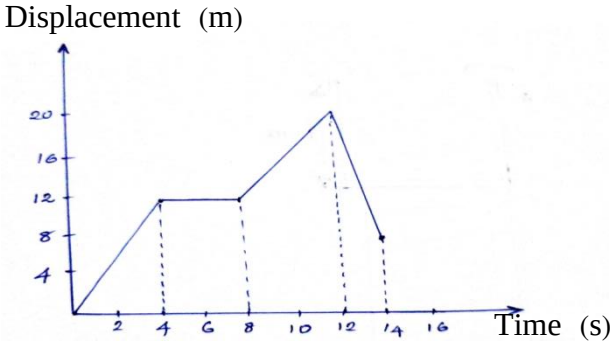
Fig. 4

06. Commonly chemical substance are made up with ionic or covalent bond

1. Writh the word equation for the reaction between the elements magnesium and oxygen.
2. Write the chemical equation for the above.
3. Which type of bond makes the product in the above reaction. Define this type of bond
4. Draw the diagram for showing that the bond formation of the above compound.
5. What is the common name of the impure substances. Define this type of substance
6. Give further the two types of impure substances and give two differences between them.
7. Give two example for each of the pure and impure substances
8. Give two example for each of the following type of mixture
   a – solid – liquid heterogeneous mixture
   b – gas - liquid homogeneous mixture
9. A mixture VIII prepared with dissolving of 12 g of the salt X in 48cm3 of a solvent. Find the mass – volume fraction of the salt X
10. Give two instances where the composition of the mixture related in our daily life.

07.

A.



1. A graph related to the straight line motion of a vehicle is given here use this graph and answer the followings
   - i. Displacement achieved with in first 4s
   - ii. Describes the motion of the vehicle between 4 – 8s
   - iii. Give the time intervals when vehicle move uniform velocity
   - iv. Find the velocity of the vehicle during 12 – 14s From this explain this motion.
   - v. Give the total displacement achieved.

B. In the figure-I light ray diagram for reflection of a ray which comes as parallel to the principals axis in the given geometrical optic, is shown here. There are the points A, B, C on the principal axis of this instrument, marked as AB = BC.

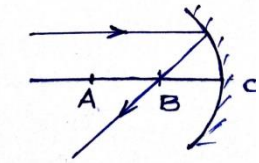


fig – I

- i. Name the point C, A and the geometrical
- ii. Copy and complete the light ray diagrams as given in the fig – II, fig – III

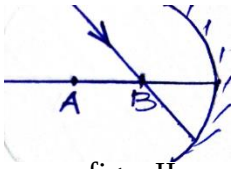


fig – II

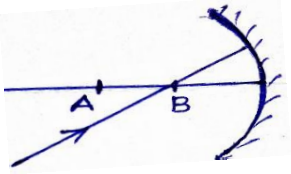
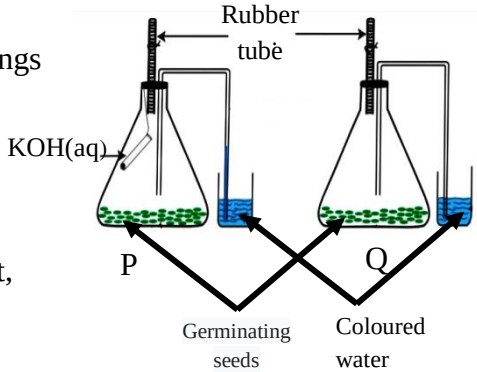


fig – III

- iii. Consider the image of the object which placed between the points A and B on the principal axis of this geometrical instrument. Mention two features of this image
- iv. Briefly explain an activity for finding the approximate total length of this instrument.

08. A. Consider the setup given near by and answer the followings

- i. What is the purpose for these setups?
- ii. What do you mean with the process that mentioned above.
- iii. Mention the observation and the reason.
- iv. Give the conclusion obtained from this experiment, and one hypothesis.



B. A vehicle starts with velocity $5ms^{-1}$ and achieves $25ms^{-1}$ with in 4s.

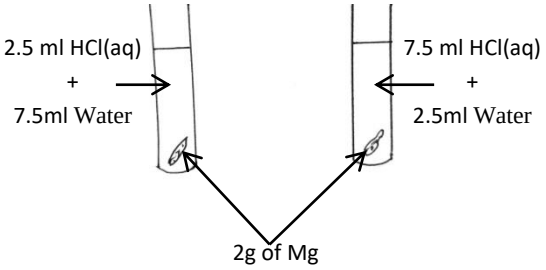
i. State newton first law.

ii. State an instance which related with the above law in our daily life.

iii. State Newton's second law.

iv. If the mass of the vehicle 600kg then force exerted for this motion.

09.



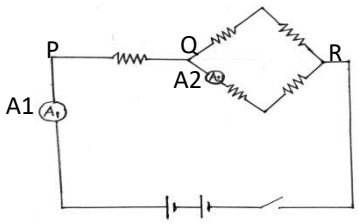
A. i. Define the rate of reaction of a reaction.

ii. Give four factors which affect the rate of reaction.

iii. Give the purpose and observations of the given setups A and B.

iv. Give the conclusion of this experiment and write the chemical equation for this reaction.

B.



i. Define terms "Electric conductors" Briefly explain that how do they conduct electricity.

ii. Mention the change of resistance of light depending resistor when intensity of light decreases and increase.

iii. What do you mean with "Equivalent resistance"

iv. Each of the resister is 4Ω as shown in the that find the equivalent resistance of this circuit.

v. Find the reading of A_1 and A_2