ROLL NUMBER				

SET	1

QP.Code:086/01/1

INDIAN SCHOOL MUSCAT
FIRST PREBOARD EXAMINATION 2023
SCIENCE
(SUB. CODE: 086)

CLASS : X
DATE: 19/01/2023

TIME ALLOTED : 3 HRS.
MAXIMUM MARKS: 80

General Instructions:

- *This question paper consists of 39 questions in 5 sections.*
- *All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.*
- *Section A consists of 20 objective type questions carrying 1 mark each.*
- *Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should in the range of 30 to 50 words.*
- *Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should in the range of 50 to 80 words*
- *Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.*
- *Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts*

SECTION - A

Select and write one most appropriate option out of the four options given for each of the questions 1 – 20

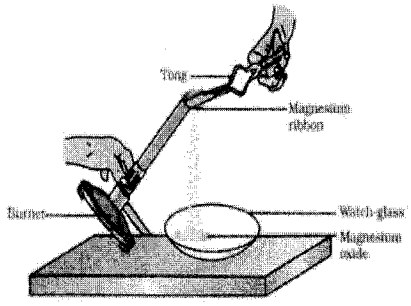
1. Which gas is released when an acid reacts with a metal? 1

   (a) CO_2 (b) H_2 (c)SO_2 (d)NO_2

2. AB + CD →AD + CB, This is a reaction of – 1

   (a) Combination (b) Double displacement (c) Decomposition (d) Displacement

3. 1



Which of the following is the correct observation of the reaction shown in the above set up?

(a) Brown powder of Magnesium oxide is formed.

(b) Colorless gas which turns lime water milky is evolved.

(c) Magnesium ribbon burns with brilliant white light.

(d) Reddish brown gas with a smell of burning Sulphur has evolved.

4. With the reference to four gases CO_2, CO, Cl_2 and O_2, which one of the options in the table is correct? 1

Option	Acidic Oxide	Used in treatment of water	Product of respiration	Product of incomplete combustion
(a)	CO	Cl_2	O_2	CO
(b)	CO_2	O_2	O_2	CO_2
(c)	CO_2	Cl_2	CO_2	CO
(d)	CO	O_2	CO_2	CO_2

5. Which of these metals requires electricity for extraction from its ore? 1

(a) Zinc (b) Silver (c) Copper (d) Aluminium

6. Phenolphthalein is- 1

(a) Yellow in acidic and pink in basic medium.

(b) Pink in acidic and colorless in basic medium.

(c) Pink in acidic and yellow in basic medium.

(d) Colorless in acidic and pink in basic medium.

7. Name the pores in a leaf through which respiratory exchange of gases takes place. 1

(a) Lenticels (b) Vacuoles (c) Xylem (d) Stomata

8. The directional orientation of part of plant in response to light is termed as 1

(a) Chemotropism (b) Phototropism (c) Geotropism (d) Hydrotropism

9. The plants that have lost their capacity to produce seeds, reproduce by 1

(a) Spore formation (b) Budding (c) Regeneration (d) Vegetative Propagation

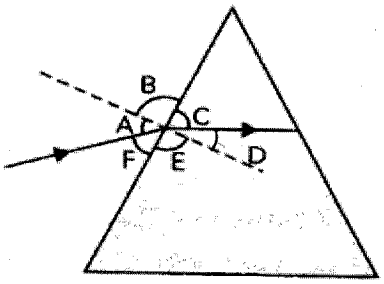
10. The process where characteristics are transmitted from parent to offspring's is called 1

(a) Heredity (b) Variation (c) Evolution (d) None of these

11. Which region of the alimentary canal absorbs the digested food? 1

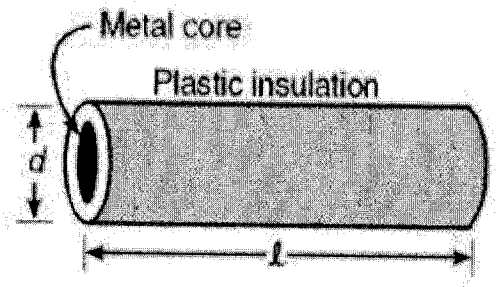
(a) Stomach (b) Small intestine (c) Large intestine (d) Liver

12. A ray of light striking a glass prism is shown below. Choose the angle that represent angle of incidence and angle of refraction respectively 1



(a) Angle B and E (b) Angle C and F (c) Angle D and F (d) Angle A and D

13. 1

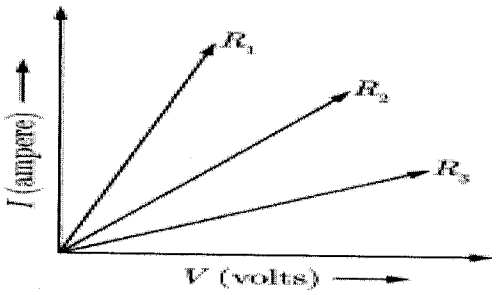


Plastic insulation surrounds a wire having diameter d and length l as shown above. A decrease in the resistance of the wire would be produced by an increase in the----------

(a) length of the wire (b) area of cross section of the wire

(c) temperature of the wire (d) None of the above

14. 1



A student carries out an experiment and plots the V-I graph for the three samples of nichrome wire with resistances R_1, R_2 and R_3 as shown in the figure. Which of the following is true.

(a) $R_1 = R_2 = R_3$ (b) $R_1 > R_2 > R_3$ (c) $R_3 > R_2 > R_1$ (d) $R_1 < R_3 < R_2$

15. The refractive index of water and dense flint glass are 1.33 and 1.65 respectively. If a ray of light travels from dense flint glass to water, it will bend---------- 1

(a) Towards normal (b) Away from normal

(c) Through the normal (d) No bending

16. The strength of the magnetic field due to a straight conductor carrying current---------- 1

(a) Increases with the current flowing through it.

(b) Decreases with the increase of thickness of the conductor.

(c) Increases as we move away from it.

(d) Does not change with the change of material of the conductor.

Q. no 17 to 20 are Assertion - Reasoning based questions.

These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

(a) Both A and R are true and R is the correct explanation of A

(b) Both A and R are true and R is not the correct explanation of A

(c) A is true but R is false

(d) A is False but R is true

17. **Assertion:** When calcium carbonate is heated, it decomposes to give calcium oxide and carbon dioxide. 1
Reason: The decomposition reaction takes place on application of heat, therefore it is an endothermic reaction.

18. Assertion (A): In anaerobic respiration, one of the end product is alcohol. 1
Reason (R) : There is an incomplete breakdown of glucose.

19. Assertion (A): Variations are seen in offspring produced by sexual reproduction. 1
Reason (R): DNA molecule generated by replication is not exactly identical to original DNA.

20. **Assertion (A):** In a series circuit, the current is constant throughout the electric circuit. 1
Reason (R): All electric devices need equal currents to operate properly.

SECTION – B

Q. no. 21 to 26 are very short answer questions.

21. A clear solution of slaked lime is made by dissolving $Ca(OH)_2$ in an excess of water. This solution is left exposed to air. The solution slowly goes milky as a faint white precipitate forms. Explain why a faint white precipitate forms, support your response with the help of a chemical equation. 2

OR

Keerti added dilute Hydrochloric acid to four metals and recorded her observations as shown in the table given below:

Metal	Gas Evolved
Cu	Yes
Fe	Yes
Mg	No
Zn	Yes

Select the correct observation(s) and give chemical equation(s) of the reaction involved.

22. Write the function of the following in the human alimentary canal: 2

a) Saliva b) HCl in stomach c) Bile juice d) Villi

23. a) Define synapse. 2

b) What happens at the synapse between two neurons?

24. What is food chain? Why is the flow of energy in an ecosystem unidirectional? Explain briefly. 2

25. An electric oven of 2KW power rating is operated in a domestic electric circuit (220 V) that has a current rating 5A. (i) What is the current drawn? (ii) What will happen to the fuse wire? Justify your answer. 2

26. What are the differences between aerobic and anaerobic respiration? Name some organisms that use anaerobic mode of respiration. 2

SECTION – C

Q.no. 27 to 33 are short answer questions.

27. Give any three methods to prevent rancidity. 3

28. (a) What are antacids? What is their role? 3

(b) What is olfactory indicators? Give one example

(c) What is POP chemically and write its name.

29. a) The depletion of ozone layer is a cause of concern. Why? 3

b) What destructive effect do chlorofluorocarbons bring about in the atmosphere?

OR

a) What is biological magnification?

b) What are the problems caused by the non-biodegradable wastes that we generate?

30. (a)Define dispersion of white light. 3

(b) Explain with the help of a neat labeled ray diagram the combination of white light using two prisms.

31. A student uses a concave mirror for image formation when the object is placed at different positions. Find the image distance and magnification if the object is placed at a distance of 10cm from the pole of a concave mirror of focal length 15cm. Also draw the respective ray diagram. 3

32. (i)Three resistors of resistances 5Ω, 10Ω and 20Ω are connected in parallel in an electrical circuit. what will be the equivalent resistance and total current if the potential difference is 20V. 3

(ii) Also draw the respective circuit diagram.

OR

(i) State Joules law of heating

(ii) An electric iron consumes energy at a rate of 800W when heating is at the maximum and 440W when the heating is at the minimum. The potential difference maintained is 220V. Calculate the current in each case.

33. What do the following transport 3

(a) Xylem (b) Phloem (c) Pulmonary vein (d) Vena cava (e) Pulmonary artery (f) Aorta

SECTION - D

Q.no. 34 to 36 are Long answer questions.

34. Shristi heated Ethanol with a compound A in presence of a few drops of concentrated sulphuric acid and observed a sweet smelling compound B is formed. When B is treated with sodium hydroxide it gives back Ethanol and a compound C. 5

(a) Identify A and C

(b) Give one use each of compounds A and B.

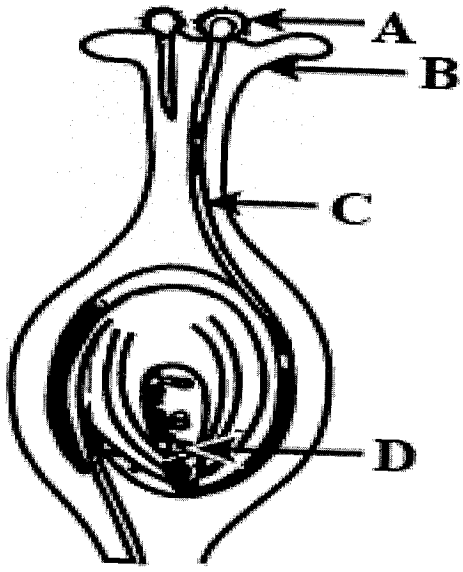
(c) Write the chemical reactions involved and name the reactions.

OR

(a) What is the role of concentrated Sulphuric acid when it is heated with Ethanol at 443 K. Give the reaction involved?

(b) Reshu by mistake forgot to label the two test tubes containing Ethanol and Ethanoic acid. Suggest an experiment to identify the substances correctly? Illustrate the reactions with the help of chemical equations

35. 5



a) Name the part marked 'A' in the diagram.

b) How does 'A' reaches part 'B'.

c) State the importance of 'C'.

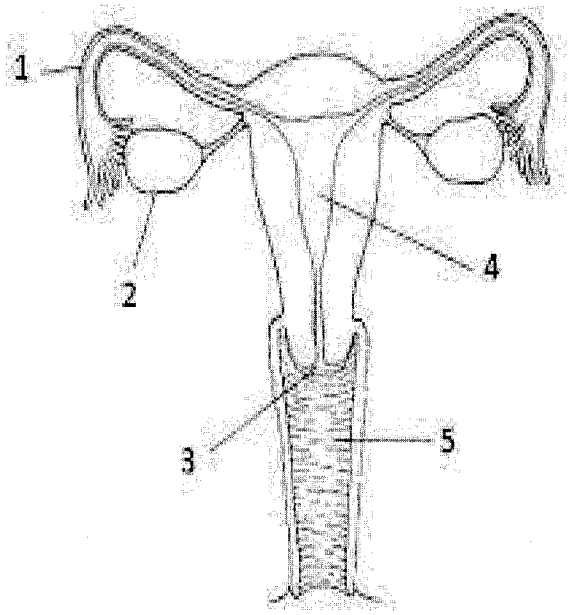
d) What happens to the part marked 'D' after fertilisation is over.

e) The part of the flower that forms a seed is

i) Ovule ii) Carpel iii) Ovary iv) Stamen

OR

a) Identify the given diagram. Name the parts of 1 to 5.



b) What are the various ways to avoid pregnancy? Elaborate any one method.

36. (a) Explain with the help of a neat diagram, how a magnetic field is produced on a current carrying conductor in the form of a circular coil or circular loop. 5

(b) Mark the direction of electric current and magnetic field in the above diagram

(c) State the rule related with this activity.

OR

(a) Explain with the help of a neat diagram, how a force is exerted on a current carrying conductor placed in a permanent magnetic field.

(b) Mark the direction of electric current and magnetic field in the above diagram.

(c) State the rule related with this activity.

SECTION - E

Q.no. 37 to 39 are case - based/data -based questions with 2 to 3 short sub - parts. Internal choice is provided in one of these sub-parts.

37. On the basis of reactivity of different metals with oxygen, water and acids as well as displacement reactions, the metals have been arranged in the decreasing order of their reactivity. This arrangement is known as activity series or reactivity series of metals. The basis of reactivity is the tendency of metals to lose electrons. If a metal can lose electrons easily to form positive ions, it will react readily with other substances. Therefore, it will be a reactive metal. On the other hand, if a meal loses electrons less rapidly to form a positive ion, it will react slowly with other substances. Therefore, such a metal will be less reactive. 4

(a) Among the given metals such as Al, Zn, Fe and Ag, Which metal is less reactive than hydrogen? Justify your answer.

(b) Which metal reacts vigorously with oxygen?

(c) Give the correct order of reactivity for the metals, Na, Cu, Mg, Al.

OR

(d) Hydrogen gas is not evolved when a metal reacts with nitric acid. It is because HNO_3 is a strong oxidizing agent. It oxidizes the H_2 produced to water and itself gets reduced to any of the nitrogen oxides (N_2O, NO, NO_2). Give the names of the metals which react with very dilute HNO_3 to evolve H_2 gas.

38. Mendel was educated in a monastery and went on to study science and mathematics at the University of Vienna. Failure in the examinations for a teaching certificate did not suppress his zeal for scientific quest. He went back to his monastery and started growing peas. Many others had studied the inheritance of traits in peas and other organisms earlier, but Mendel blended his knowledge of science and mathematics and was the first one to keep count of individuals exhibiting a particular trait in each generation. This helped him to arrive at the laws of inheritance. 4

Based on the above information, answer the following questions.

(a) Why Mendel selected garden pea as his experimental material?

(b) A pea plant with blue colour flower denoted by 'BB' is cross-bred with a pea plant with white flower denoted by 'bb'.

(i) What is the expected colour of the flowers in their F1 progeny?

(ii) What is the expected phenotypic ratio in F2 generation?

(c) What do you meant by dominant and recessive trait?

OR

Name the segment of DNA that codes for a specific character.

39. The molecules of air and other fine particles in the atmosphere have size smaller than the wavelength of visible light. So they are more effective in scattering light of shorter wavelengths at the blue end than light of longer wavelengths at the red end. The red 2 light has a wavelength about 1.8 times greater than blue light. Thus, when sunlight passes through the atmosphere, the fine particles in air scatter the blue colour more strongly than red. The scattered blue light enters our eyes. If the earth had no atmosphere, there would not have been any scattering. Why do stars appear higher than they actually are? Does this have something to do with the scattering of light? Well, the answer to this is 'No'. Stars appear higher than they are because of 'Atmospheric Refraction'. 4

(a) The sky appears dark to an astronaut. Why?

(b) Arrange the following colours of visible light in their increasing order of wavelength

Orange, Blue, Violet, Green and Red

(c) Why do stars appear to twinkle but planets do not?

OR

What do you mean by Tyndall effect? Give one example

*****END OF THE QUESTION PAPER*****

ROLL NUMBER				

SET	2

QP.Code:086/01/2

INDIAN SCHOOL MUSCAT
FIRST PREBOARD EXAMINATION 2023
SCIENCE
(SUB. CODE-086)

CLASS : X
DATE: 19/01/2023

TIME ALLOTED : 3 HRS.
MAXIMUM MARKS: 80

General Instructions:

- *This question paper consists of 39 questions in 5 sections.*
- *All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.*
- *Section A consists of 20 objective type questions carrying 1 mark each.*
- *Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should in the range of 30 to 50 words.*
- *Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should in the range of 50 to 80 words*
- *Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.*
- *Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts*

SECTION - A

Select and write one most appropriate option out of the four options given for each of the questions 1 – 20

1. Name the compound used for removing permanent hardness of water. 1

   (a) Caustic Soda (b) Washing Soda (c) Bleaching Powder (d) Baking Soda

2. Chips packets are generally flushed with an inert gases to prevent rancidity. Find the gas used. 1

   (a) H_2 (b) N_2 (c) Cl_2 (d) O_2

3. The chemical reaction in which heat energy is liberated during the reaction is known as- 1

   (a) Precipitation (b) Endothermic (c) Exothermic (d) None of these

4. Amalgamation is the process of making alloys with one of the following metals. 1

   (a) Silver (b) Copper (c) Mercury (d) Nickel

5. Which allotrope of carbon shows the property of electrical conduction? 1

   (a) Fullerene (c) Diamond (c) Coke (d) Graphite

6. If we add some sodium carbonate in distilled water, the pH of solution will be 1

(a) less than 7 (b) exactly 7 (c) very close to 7 (d) more than 7

7. Name the pores in a leaf through which respiratory exchange of gases takes place. 1

(a) Lenticels (b) Vacuoles (c) Xylem (d) Stomata

8. The directional orientation of part of plant in response to gravity is termed as 1

(a) Chemotropism (b) Phototropism (c) Geotropism (d) Hydrotropism

9. Fertilisation in human beings takes place in 1

(a) Uterus (b) Vagina (c) Fallopian tube (d) Cervix

10. The process where characteristics are transmitted from parent to offspring's is called 1

(a) Heredity (b) Variation (c) Evolution (d) None of these

11. Rings of cartilage present in the throat ensure that 1

(a) Air is filtered (b) Air is at room temperature (c) Air passage does not collapse

(d) Air is free of microbes

12. A complete circuit is left on for several minutes, causing the connecting copper wire to become hot. As the temperature of the wire increases, the electrical resistance of the wire---------- 1

(a) decreases.

(b) remains the same.

(c) increases.

(d) increases for some time and then decreases.

13. How will the size of the image have formed by a convex lens change, when an object moves closer to the lens. 1

(a) Image becomes highly magnified

(b) Image becomes point sized

(c)Size of the image remains unchanged

(d) Image becomes diminished

14. The strength of magnetic field due to a current carrying solenoid is ---------- 1

(a) Independent of the material of the coil.

(b) Uniform inside the solenoid

(c) Independent of the number of turns per unit length of the solenoid.

(d) Independent of the strength of flowing current

15. The far point of a myopic person is 60 **cm** in front of the eye. What should be the power of lens required to correct this defect of vision? 1

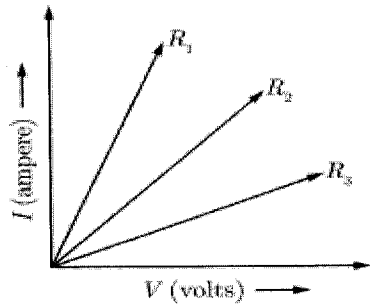
(a) 0.16 D

(b) -0.16 D (minus 0.16D)

(c) 1.67 D

(d) -1.67 D (minus 1.67D)

16. 1



A student carries out an experiment and plots the V-I graph for the three samples of nichrome wire with resistances R_1, R_2 and R_3 as shown in the figure. Which of the following is true.

(a) $R_1 = R_2 = R_3$

(b) $R_1 > R_2 > R_3$

(c) $R_3 > R_2 > R_1$

(d) $R_1 < R_3 < R_2$

Q. no 17 to 20 are Assertion - Reasoning based questions.

These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

(a) Both A and R are true and R is the correct explanation of A

(b) Both A and R are true and R is not the correct explanation of A

(c) A is true but R is false

(d) A is False but R is true

17. **Assertion:** A chemical reaction is a short hand method of representing a chemical reaction. 1
Reason: Formulae of elements and compounds are changed to balance an equation.

18. Assertion (A): In anaerobic respiration, one of the end product is alcohol. 1
Reason (R): There is an incomplete breakdown of glucose.

19. Assertion (A): Variations are seen in offspring produced by sexual reproduction. 1
Reason (R): DNA molecule generated by replication is not exactly identical to original DNA.

20. **Assertion (A):** A ray of light passing through the centre of curvature of a concave mirror after reflection, gets reflected back along the same path. 1
Reason (R) : The incident ray fall on the mirror along the normal to the reflecting surface.

SECTION – B

Q. no. 21 to 26 are very short answer questions.

21. (a)Define metallurgy (b) Define Anode mud. 2

OR

(a) List out any two allotropes of carbon atom?

(b) Give any two properties of any one of the allotropes of carbon.

22. Write the function of the following in the human alimentary canal: 2

(a) Saliva (b) HCl in stomach (c) Bile juice (d) Villi

23. (a) Define synapse. 2

(b) What happens at the synapse between two neurons?

24. Name the wastes which are generated in your house daily. What measures would you take for their disposal? 2

25. Draw a neat labeled circuit diagram of a domestic household circuit. 2

26. a) Mention any two components of blood. 2

b) Write any two differences between arteries and veins.

SECTION – C

Q.no. 27 to 33 are short answer questions.

27. Define Oxidation and reduction. Give one example for redox reaction. 3

28. (a) How will you prepare washing soda? 3

(b) Why washing soda is used in water treatment?

29. (a) The depletion of ozone layer is a cause of concern. Why? 3

(b) What destructive effect do chlorofluorocarbons bring about in the atmosphere?

OR

(a) What is biological magnification?

(b) What are the problems caused by the non-biodegradable wastes that we generate?

30. (a) If an object is placed 20 cm in front of the above lens of focal length 10 cm, find the distance from the mirror at which a screen should be placed in order to obtain a sharp image. 3

(b) Draw the ray diagram to justify your answer.

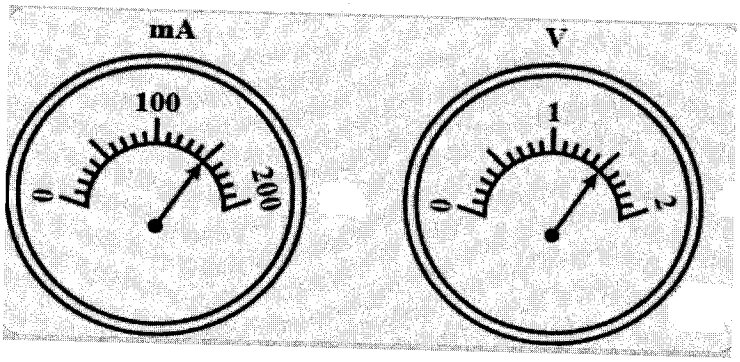
31. Explain the function of the following 3

(a) Iris

(b) Ciliary muscles

(c) Optic nerves

32. (i) The current flowing through a resistor and the potential difference across its ends are 3



(ii) What are the advantages of parallel combination of resistors with respect to the series combination of resistors?

OR

(i) Tungsten is used exclusively for making filament of electric lamps. Give reason.

(ii) Calculate and confirm which of the following uses more energy, a 350W TV set in 2hours or a 4400W vacuum cleaner in 15minutes.

33. a) Define excretion. 3

b) Name the basic filtration unit present in the kidney.

c) Draw excretory system in human beings and label the following organs of excretory system which perform following functions:

i) Form urine.

ii) Is a long tube which collects urine from kidney.

iii) Store urine until it is passed out.

SECTION - D

Q.no. 34 to 36 are Long answer questions.

34. In hydrocarbon chain, one or more hydrogen atoms can be replaced by other atoms in accordance with their valencies. The species which replaces the hydrogen atom is called X. These X impart chemical properties to the compound which contain one of the heteroatom is oxygen. The compound which contain X upon heating with Con .H_2SO_4 gives an unsaturated compound Y. 5

(a) Identify X and Y.

(b) Give the respective chemical equation for the formation of compound Y.

(c) Draw the electron dot structure of compound Y.

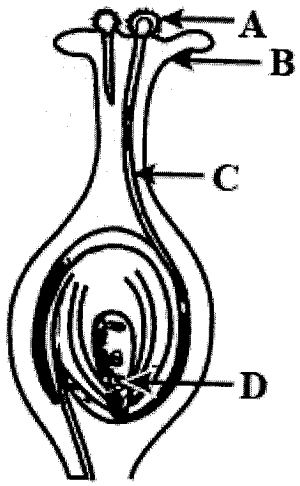
(d) Give the respective chemical equation when Y is subject to reduction.

OR

(a) Define combustion and why it is exothermic? Give one example.

(b) Describe the oxidation reaction of ethanol with proper reaction conditions and equation.

35. 5



a) Name the part marked 'A' in the diagram.

b) How does 'A' reaches part 'B'.

c) State the importance of 'C'.

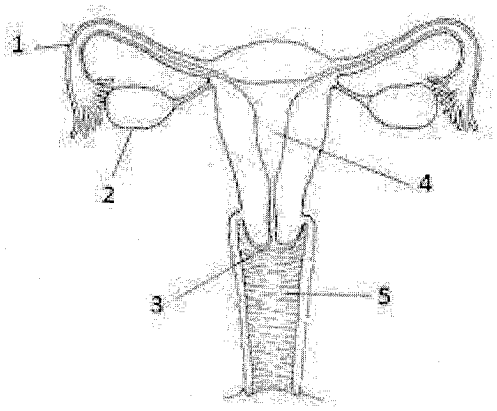
d) What happens to the part marked 'D' after fertilisation is over.

e) The part of the flower that forms a seed is

i) Ovule ii) Carpel iii) Ovary iv) Stamen

OR

a) Identify the given diagram. Name the parts of 1 to 5.



b) What are the various ways to avoid pregnancy? Elaborate any one method.

36. (a) Explain with the help of a neat diagram, how a force is exerted on a current carrying conductor placed in a permanent magnetic field. 5

(b) Mark the direction of electric current and magnetic field in the above diagram.

(c) State the rule related with this activity.

OR

(a) Explain with the help of neat diagram, how a magnetic field is produced on a current carrying conductor in the form of a circular coil or circular loop.

(b) Mark the direction of electric current and magnetic field in the above diagram.

(c) State the rule related with this activity.

SECTION - E

Q.no. 37 to 39 are case - based/data -based questions with 2 to 3 short sub - parts. Internal choice is provided in one of these sub-parts.

37. Two students decided to investigate the effect of water and air on iron object under identical experimental conditions. They measured the mass of each object before placing it partially immersed in 10 ml of water. After a few days, the object was removed, dried and their masses were measured. The table shows their results. 4

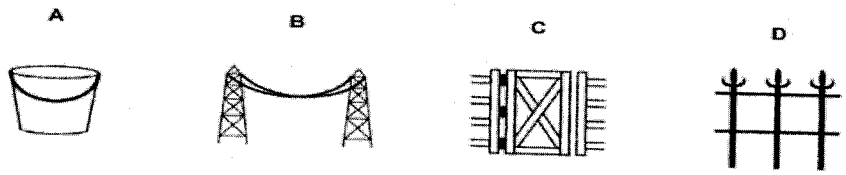
Student	Object	Mass of Object before Rusting in g	Mass of the coated object in g
A	Nail	3.0	3.15
B	Thin plate	6.0	6.33

(a) What might be the reason for the varied observations of the two students?

(b) In another set up the students coated iron nails with zinc metal and noted that, iron nails coated with zinc prevents rusting. They also observed that zinc initially acts as a physical barrier, but an extra advantage of using zinc is that it continues to prevent rusting even if the layer of zinc is damaged. Name this process of rust prevention and give any two other methods to prevent rusting.

OR

(c) In which of the following applications of Iron, rusting will occur most? Support your answer with valid reason.



A - Iron Bucket electroplated with Zinc

B - Electricity cables having iron wires covered with aluminium

C - Iron hinges on a gate

D - Painted iron fence

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(a) The sky appears dark to an astronaut. Why?

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What do you mean by Tyndall effect? Give one example

*****END OF THE QUESTION PAPER*****

ROLL NUMBER				

SET	3

QP.Code:086/01/3

INDIAN SCHOOL MUSCAT
FIRST PREBOARD EXAMINATION 2022
SCIENCE
(SUB. CODE -086)

CLASS: X
DATE: 19 /01/2023

TIME ALLOTED: 3 HRS.
MAXIMUM MARKS: 80

General Instructions:

- *This question paper consists of 39 questions in 5 sections.*
- *All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.*
- *Section A consists of 20 objective type questions carrying 1 mark each.*
- *Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should in the range of 30 to 50 words.*
- *Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should in the range of 50 to 80 words*
- *Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.*
- *Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts*

SECTION - A

Select and write one most appropriate option out of the four options given for each of the questions 1 – 20

1. The following salt is obtained when a strong acid reacts with a strong base. 1

   (a) Acidic Salt (b) Neutral Salt (c) Basic Salt (d) No salt is formed.

2. The special name given to the corrosion of iron materials is- 1

   (a) Tarnishing (b) Rusting (c) Fading (d)denaturation

3. The following chemical substance undergoes decomposition reaction. Which among them is used in black and white photography. 1

   (a) $Pb(NO_3)_2$ (b)$CaCO_3$ (c)AgBr (d)H_2O

4. In general gold metal cannot be dissolved in any acid or bases, because they show resistance to the attack of acids and bases. In which of the following solution gold is soluble? 1

   (a) Copper Sulphate (b) Ferrous Sulphate (c) Aquaregia (d) Slaked lime

5. The lowest melting point metals are- 1

(a) Na & K (b)Ca & Mg (c) Al & Zn (d)Ga & Cs

6. The shiny finish of wall after white wash is because of – 1

(a) Calcium oxide (b) Calcium hydroxide (d) Calcium phosphate (d) Calcium Carbonate

7. Name the pores in a leaf through which respiratory exchange of gases takes place. 1

(a) Lenticels (b) Vacuoles (c) Xylem (d) Stomata

8. The directional orientation of part of plant in response to water is termed as 1

(a) Chemotropism (b) Phototropism (c) Geotropism (d) Hydrotropism

9. The ability of a cell to divide into several cells during reproduction in Plasmodium is called 1

(a) Budding (b) Multiple fission (c) Binary fission (d) Fragmentation

10. The process where characteristics are transmitted from parent to offspring's is called 1

(a) Heredity (b) Variation (c) Evolution (d) None of these

11. The mode of nutrition found in fungi is: 1

(a) Parasitic nutrition (b) Holozoic nutrition

(c) Autotrophic nutrition (d) Saprotrophic nutrition

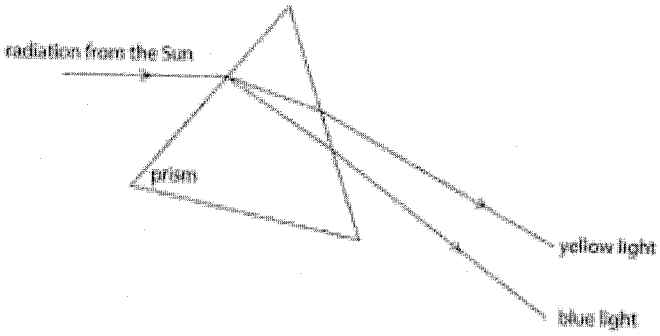
12. If the refractive index of water is 1.33 and the speed of light in vacuum is 3×10^8 m/s, then the speed of light in water would be ----------. 1

(a) 1×10^8 m/s (b) 1.25×10^8 m/s (c) 2.25×10^8 m/s (d) 2×10^8 m/s

13. A torch bulb is rated at 1.5 V and 500 mA. Its resistance will be---------- 1

(a) 2 Ω (b) 2.5Ω (c) 1 Ω (d) 3 Ω

14. 1

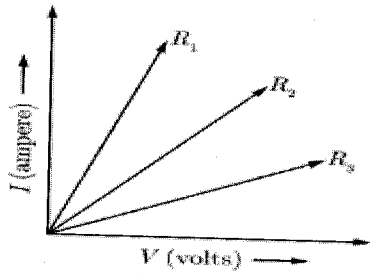


With reference to the above diagram, which of the two lights mentioned will have the higher wavelength?

(a) Blue light (b) Yellow light

(c) Both blue and yellow lights (d) Neither blue nor yellow

15. 1



A student carries out an experiment and plots the V-I graph for the three samples of nichrome wire with resistances R_1, R_2 and R_3 as shown in the figure. Which of the following is true.

(a) $R_1 = R_2 = R_3$

(b) $R_1 > R_2 > R_3$

(c) $R_3 > R_2 > R_1$

(d) $R_1 < R_3 < R_2$

16. The magnetic field due to a current carrying solenoid is ---------- 1

(a) Independent of the material of the coil.

(b) Uniform inside the solenoid

(c) Independent of the number of turns per unit length of the solenoid.

(d) Independent of the strength of flowing current.

Q. no 17 to 20 are Assertion - Reasoning based questions.

These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

(a) Both A and R are true and R is the correct explanation of A

(b) Both A and R are true and R is not the correct explanation of A

(c) A is true but R is false

(d) A is False but R is true

17. **Assertion:** When calcium carbonate is heated, it decomposes to give calcium oxide and carbon dioxide. 1

Reason: The decomposition reaction takes place on application of heat, therefore it is an endothermic reaction.

18. Assertion (A): In anaerobic respiration, one of the end product is alcohol. 1

Reason (R): There is an incomplete breakdown of glucose.

19. Assertion (A): Variations are seen in offspring produced by sexual reproduction. 1

Reason (R): DNA molecule generated by replication is not exactly identical to original DNA.

20. **Assertion(A):** A normal human eye can clearly see all the objects beyond certain minimum distance. 1

Reason (R): The normal human eye has the capacity of adjusting the focal length of eye lens.

SECTION – B

Q. no. 21 to 26 are very short answer questions.

21. What will happen to a silver spoon if it is kept in copper sulphate solution? Give reason. 2

OR

Explain the meanings of malleability and ductility.

22. Write the function of the following in the human alimentary canal: 2

(a) Saliva (b) HCl in stomach (c) Bile juice (d) Villi

23. (a) Define synapse. 2

(b) What happens at the synapse between two neurons?

24. How can we help in reducing the problem of waste disposal? Suggest any four methods. 2

25. Draw a neat labeled circuit diagram of a domestic household circuit. 2

26. (a) What are the differences between the transport of materials in xylem and phloem? 2

(b) What is the role of saliva in the digestion of food?

SECTION – C

Q.no. 27 to 33 are short answer questions.

27. Define the following reactions 3

(a)Exothermic reaction (b) Endothermic reaction (c) Combination reaction.

28. (a) Define water of crystallization. 3

(b) Why acid base reaction is so called neutralization reaction?

(c)Why baking soda is used in bakery items?

29. (a) The depletion of ozone layer is a cause of concern. Why? 3

(b) What destructive effect do chlorofluorocarbons bring about in the atmosphere?

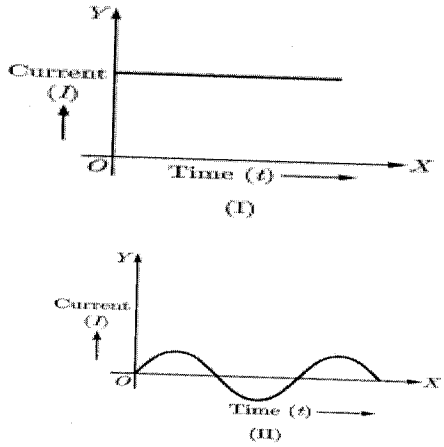
OR

What is biological magnification?

30. You are given two lenses of focal length +20cm and -25cm. Calculate the power of the two lenses respectively. Also identify which among the two lenses can form a virtual and magnified image of an object. 3

31. How does the size of the eyeball changes for a myopic eye and hypermetropic eye? With the help of ray diagrams, show how this change of size affect the position of image in each case. 3

32. In our daily life, we use two types of electric current whose current-time graphs are given below: 3



(a) Identify the types of current in each case.

(b) What is frequency of current used in domestic supply in India?

(c)Out of the two, which one is used in transmitting electric power over long distance and why?

OR

(a)Three resistors of resistances 5Ω, 10Ω and 20Ω are connected in parallel in an electrical circuit. What will be the equivalent resistance and total current if the potential difference is 20V?

(b) Also draw the respective circuit diagram.

33. (a) Draw a diagram of human respiratory system and label – trachea, lungs, diaphragm and alveolar sac on it. 3

(b) In the process of respiration, state the function of alveoli.

SECTION - D

Q.no. 34 to 36 are Long answer questions.

34. Catenation is a property of carbon atom to form bond with other atoms of carbon. Like carbon, silicon forms compounds with hydrogen up to seven or eight atoms of silicon. 5

(a) What is catenation?

(b) Draw the electron dot structure for benzene.

(c) What are structural isomers? Draw the possible structural isomers for butane and give its common name.

OR

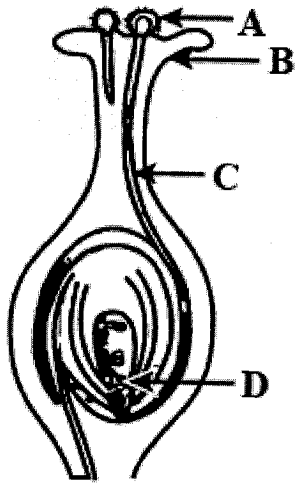
(a) Give one difference between saturated and unsaturated hydrocarbon.

(b) Define Functional group.

(c) What is a homologous series?

(d) What are soaps?

(e) What are detergents?

35. 

5

a) Name the part marked 'A' in the diagram.

b) How does 'A' reaches part 'B'.

c) State the importance of 'C'.

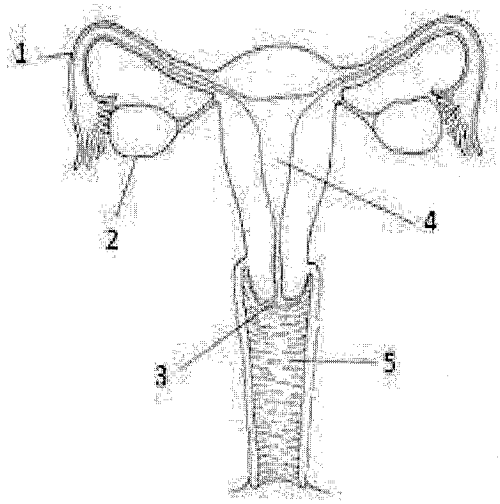
d) What happens to the part marked 'D' after fertilisation is over.

e) The part of the flower that forms a seed is

i) Ovule ii) Carpel iii) Ovary iv) Stamen

OR

a) Identify the given diagram. Name the parts of 1 to 5.



b) What are the various ways to avoid pregnancy? Elaborate any one method.

36. (a) Explain with the help of a neat diagram, how a force is exerted on a current carrying conductor placed in a permanent magnetic field. 5

(b) Mark the direction of electric current and magnetic field

(c) State the rule related with this activity.

OR

(a) Explain with the help of a neat diagram, how a magnetic field is produced on a current carrying conductor in the form of a circular coil or circular loop.

(b) Mark the direction of electric current and magnetic field

(c) State the rule related with this activity.

SECTION - E

Q.no. 37 to 39 are case - based/data -based questions with 2 to 3 short sub - parts. Internal choice is provided in one of these sub-parts.

37. Two students decided to investigate the effect of water and air on iron object under identical experimental conditions. They measured the mass of each object before placing it partially immersed in 10 ml of water. After a few days, the object was removed, dried and their masses were measured. The table shows their results.

Student	Object	Mass of Object before Rusting in g	Mass of the coated object in g
A	Nail	3.0	3.15
B	Thin plate	6.0	6.33

(a) What might be the reason for the varied observations of the two students?

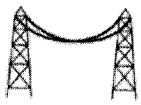
(b) In another set up the students coated iron nails with zinc metal and noted that, iron nails coated with zinc prevents rusting. They also observed that zinc initially acts as a physical barrier, but an extra advantage of using zinc is that it continues to prevent rusting even if the layer of zinc is damaged. Name this process of rust prevention and give any two other methods to prevent rusting.

OR

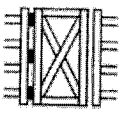
(c) In which of the following applications of Iron, rusting will occur most? Support your answer with valid reason.

A

B



C



D

A - Iron Bucket electroplated with Zinc

B - Electricity cables having iron wires covered with aluminium

C - Iron hinges on a gate

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