**I.P.S.Sr.Sec.School**

**Max Time : 3 hr** **Class : 10th Science Max Marks : 80**

**Mid Term Exam**

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| **General Instructions** : Read the following instructions carefully.   1. The question paper comprises 4 sections A, B, C and D. There are 36 questions in the question paper. All questions are compulsory. 2. **Section – A** : Question number **1 to 20** , all questions and parts thereof are of **1** mark each. These question contain Multiple Choice Questions (MCQs), very short answer questions and assertion-reason type questions. Answers to these should be given in one word or one sentence. 3. **Section – B :** Question number **21 to 26** are short answer type questions, carrying **2** marks each. Answer to these questions should in the range of 30 to 50 words. 4. **Section – C :** Question number **27 to 33** are short answer type questions, carrying **3** marks each. Answer to these questions should in the range of 50 to 80 words. 5. **Section – D :** Question number **34 to 36** are long answer type questions, carrying **5** marks each. Answer to these questions should in the range of 80 to 120 words. 6. There is no overall choice. However, internal choices has been provided in some questions. A student has to attempt only one of the alternatives in such questions 7. Wherever necessary, neat and properly labeled diagrams should be drawn. |

**Section – A**

1. What is primary function of kidney?
2. Write a balanced chemical equation that represents a photo-decomposition reaction.
3. Define electric current?

**OR**

Write the SI unit of resistivity.

1. What is meant by optical centre of a lens?

**OR**

Can a convex mirror form a real image of an object?

1. What is the role of lymph in transportation?
2. Name the structural and functional unit of kidney.
3. How is concentration of Hydronium ion (H3O+) affected when a solution of acid is diluted?
4. Draw the symbol for an ammeter.
5. Define one ampere.
6. The image formed by a convex lens is always real. Is it true?

**OR**

What is the cause of refraction?

1. Name the instrument used to measure blood pressure.
2. What is the final product of proteins, carbohydrates and fats digestion?
3. Define one volt.

**For Question no. 14 to 16, two statements are given- one labelled Assertion (A) and other Reason (R). Select the correct answer to those questions from the codes (a), (b) , (c) and (d) as given below:**

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

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

(c) A is true, but R is false.

(d) A is false, but R is true.

1. **Assertion:** Respiration is an exothermic process.

**Reason:** Glucose combines with oxygen in the cells of our body and provides energy.

1. **Assertion:** Higher is the refractive index of a medium or denser the medium, lesser is the velocity of light in that medium

**Reason:** Refractive index is inversely proportional to velocity of light in that medium.

1. **Assertion:** Silver bromide is stored in dark bottles in the labs.

**Reason:** Silver bromides decomposes when exposed to light.

**Answer Q. No. 17 – 20 contain 5 sub parts each. You are expected to answer any 4 subparts in these questions.**

1. Read the following and answer any 4 questions form 17 (i) to 17 (v).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Metal** | **Iron (II) Sulphate** | **Copper (II) Sulphate** | **Zinc Sulphate** | **Silver nitrate** |
| **A** | No reaction | Displacement | No reaction | Displacement |
| **B** | Displacement | Displacement | Displacement | Displacement |
| **C** | No reaction | No reaction | No reaction | Displacement |
| **D** | No reaction | No reaction | No reaction | No reaction |

1. Which of the following is the most active metal?

|  |  |  |  |
| --- | --- | --- | --- |
| a) A | b) B | c) C | d) D |

1. Which of the following is the least reactive metal?

|  |  |  |  |
| --- | --- | --- | --- |
| a) A | b) B | c) C | d) D |

1. The order of increasing reactivity is

|  |  |  |  |
| --- | --- | --- | --- |
| a) A < B < C < D | b) C < A < D < B | c) D < A < C < B | d) D < C < A < B |

1. Which of the following metal container can be used to store both zinc sulphate solution and silver nitrate solution?

|  |  |  |  |
| --- | --- | --- | --- |
| a) A | b) D | c) C | d) All of these |

1. Metal D can be

|  |  |  |  |
| --- | --- | --- | --- |
| a) Na | b) Mg | c) Al | d) Au |

1. **Read the following and answer any 4 questions form 18 (i) to 18 (v).**

Q. No. 18 (i) to 18 (v) are based on the table given below.

|  |  |  |
| --- | --- | --- |
| Sr. No. | Name of process | Word equation |
| 1 | Combustion | Magnesium + Oxygen Magnesium oxide |
| 2 | Photosynthesis | Carbon dioxide + water Glucose + Oxygen + water |
| 3 | Combination | Iron + sulphur Iron sulphide |
| 4 | Decomposition | Calcium carbonate Calcium oxide + Carbon dioxide |

1. The reaction in which 2 or more substances combine to form a single substance under suitable conditions is

|  |  |
| --- | --- |
| a) Combination reaction | b) Displacement reaction |
| c) Decomposition reaction | d) Neutralization reaction |

1. Which of the following is essential for photosynthesis?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Sunlight | b) Chlorophyll | c) Glucose | d) Both (a) & (b) |

1. When a chemical compound decomposes on absorbing light and energy, then the reaction which takes place is known as

|  |  |
| --- | --- |
| a) Photosynthesis | b) Photodecomposition |
| c) Combination | d) Thermal decomposition |

1. Which of the following reactions is an example of combustion reaction?

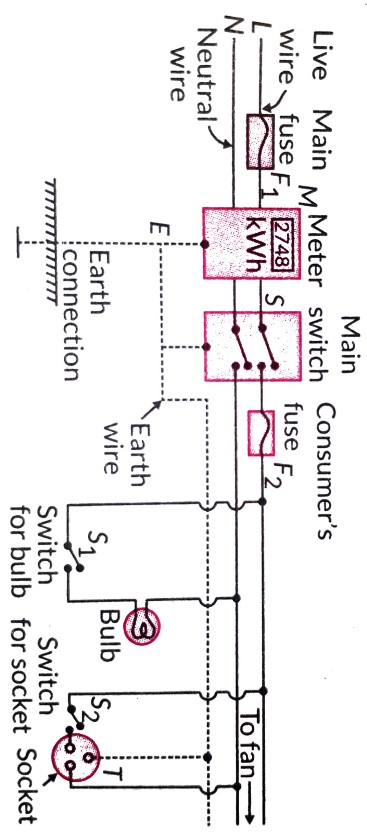
|  |  |
| --- | --- |
| a) C (s) + O2 (g) CO2 (g) | b) Zn (s) + H2SO4 (aq) ZnSO4 (aq) + H2 (g) |
| c) Zn (s) + 2 HCl (aq) ZnCl2 (aq) + H2 (g) | d) 3 Mg (s) + N2 (g) Mg3N2 (s) |

1. Which of the following reaction is an example of combination reaction?

|  |  |
| --- | --- |
| a) H2 (g) + Cl2 (g) 2 HCl (g) | b) Fe (s) + S (s) FeS (g) |
| c) 2 H2 (g) + O2 (g) 2 H2O (l) | d) All of them |

1. **Read the following and answer any 4 questions form 19 (i) to 19 (v).**

In house hold electric circuits, the mains supply is delivered to your homes using three core cable as shown here. The cable consists of three wires, live wire, neutral wire and earth wire. The live wire is at potential difference of 220 V for the domestic supply and the potential difference between live and neutral wire is 220 volts. The live wire is connected to electric meter through a fuse or a circuit breaker of higher rating. The neutral wire is connected directly to the electric meter.



1. Potential difference between live and neutral wire is

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1000 V | b) 100 V | c) 500 V | d) 220 V |

1. Switches are connected in household circuit with which wire?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Earth wire | b) Neutral wire | c) Live wire | d) None of these |

1. What is usual current rating of the fused wire in the line if electric iron, geysers, room heater etc. are in use?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 15 A | b) 5 A | c) 10 A | d) 25 A |

1. For all electrical appliances which property of circuit is recommended?

|  |  |
| --- | --- |
| a) Earthing | b) Neutralizing |
| c) Connecting with fuse | d) None of these |

1. Home circuit is common in parallel because

a) In parallel circuit resistance is maximum

b) In parallel circuit if one device is damaged, then it does not affect other devices.

c) Both of these

d) None of these

1. **Read the following and answer any 4 questions form 20 (i) to 20 (v).**

A concave lens is thick at the edges and thin at the centre while a convex lens is thick at the centre and thin at the edges. We can distinguish between a concave lens and convex lens without touching them. For this keep a book closed to a lens and observed the image of the text of the book through the lens. If the letters appear enlarged, then it is a convex lens and if the letters appear diminished then it is a concave lens.

Convex lens converges light rays and hence known as converging lens. Similarly, concave lens diverges light rays and it is known as diverging lens. Linear magnification produced by a lens is equal to the ratio of the image distance to the object distance. Power of a lens is defined as the reciprocal of its focal length.

1. What type of image is always made by a concave lens?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Real | b) Inverted | c) Virtual | d) Enlarged |

1. If magnification produced by a spherical lens is +0.75, then what is the nature of the lens?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Concave | b) Convex | c) Plane-concave | d) Both (a) & (b) |

1. What is the power of a convex lens with focal length 80 cm?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 2.5 D | b) 1.5 D | c) 0.25 D | d) 1.25 D |

1. What kind of lens is present in human eye?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Converging | b) Diverging | c) Both (a) & (b) | d) None of these |

1. The lens which is thick at edges and thin at centre is

|  |  |  |  |
| --- | --- | --- | --- |
| a) Bi-concave lens | b) Concave lens | c) Convex lens | d) None of these |

**Section – B**

1. In the given series of reactions, what are Y and Z respectively?

NaCl + H2O + CO2 + NH3 X + Y Z Q

**OR**

Write the chemical formula of bleaching powder. How is bleaching powder prepared?

1. Name a metal which : (i) is the best conductor of heat (ii) Has a very low melting point

(iii) Does not react with oxygen even at high temperature. (iv) Is most ductile

1. (i) Would it be right to store a solution of silver nitrate (AgNO3) in copper vessel? Explain

(ii) What type of oxides are formed when non-metals combine with oxygen?

1. An object is placed at 2 F­1 in front of convex lens. What is the (a) position (b) size (c) nature of image?
2. (i) Define nutrition. What are the different modes of nutrition?

(ii) What is the role of hydrochloric acid in our stomach?

1. What happens when bases react with non-metal oxides? Explain with the help of an example. What does this reaction tell us about the nature of non-metal oxides?

**Section – C**

1. Explain the steps of digestion in the small intestine.

**OR**

(a) List the different ways in which glucose is oxidized and provide energy in various organisms.

(b) What are the differences between the two ways of oxidation of glucose in organisms?

1. (a) Give differences between single circulation and double circulation.

(b) Write the functions of plasma in blood

1. Give three differences between the displacement and double displacement reactions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (A) 6 | (B) 10 | (C) 1 | (D) 7 | (E) 13 |

1. pH value of some solution are given below :

(i) For each solution, say whether it is acidic, alkaline or neutral.

(ii) Pick out the most acidic and most alkaline solutions.

(iii) What colour does universal indicator show in a neutral solution?

1. Write down the balanced chemical equations for the following chemical changes.

(i) Combination of iron and sulphur (ii) Thermal decomposition of calcium carbonate

(iii) Burning of magnesium ribbon

1. A concave mirror produces a real image 10 mm tall, of an object 2.5 mm tall placed at 5 cm from the mirror. Calculate focal length of the mirror and the position of the image?
2. When an object is placed at a distance of 60 cm from a convex spherical mirror, the magnification produced is 1/2. Where the object should be placed to get a magnification of 1/3?

**Section – D**

1. (a) Draw a diagram depicting human alimentary canal and label on it: gall bladder , Liver and Pancreas.

(b) State the role of Liver and pancreas.

(c) Name the organ which performs the following functions in human.

(i) Absorption of digested food (ii) Absorption of water.

1. (a) Plaster of Paris should be stored in a moister-proof container. Explain why?

(b) (i) Write the electron dot structures of sodium, oxygen and magnesium.

(ii) Show the formation of Na2O and MgO by transfer of electrons.

(iii) What are the ions present in these compounds?

1. (a) Difference between an artery and a vein.

(b) A geyser rated 1500 W, 250 V. It is connected to 250 V mains. Calculate : (i) the current drawn

(ii) The energy consumed in 50 hours (iii) the cost of energy consumed at Rs. 2.2 per kWh.