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

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

**Mid Term Exam**

**Section – A**

1. Multiple choice Questions: [ 1 x 20 = 20 ]
2. ‘P’ is produced by the action of chlorine on dry slaked lime. ‘Q’ is a non-corrosive base and used for faster cooking. On heating ‘R’ at 373 K, it becomes calcium sulphate hemihydrate. Identify P , Q and R respectively.

|  |  |  |  |
| --- | --- | --- | --- |
| a) CaOCl2 , NaHCO3 , gypsum | b) CaO , Na2CO3 , CaOCl2 | c) Ca(OH)2 , NaHCO3 , CaSO4 | d) CaOCl2 , Na2CO3 , NH4Cl |

1. In the reaction : Br2 + 2 I –  2 Br –  + I2 , the oxidizing agent is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Br2 | b) I – | c) Br – | d) I2 |

1. To form an image twice the size of the object, using a convex lens of focal length 20 cm, the object distance must be :

|  |  |
| --- | --- |
| a) < 20 cm | b) > 20 cm |
| c) < 20 cm and between 20 cm and 40 cm | d) cannot say |

1. Select up the incorrect pair.

|  |  |
| --- | --- |
| a) Mouth cavity – Carbohydrate digestion | b) Small intestine – Fat digestion |
| c) Pancreas – Fat digestion | d) Liver – Protein digestion |

1. Complete the reaction : Zn + 2 NaOH

|  |  |  |  |
| --- | --- | --- | --- |
| a) Zn(OH)2 + H2 | b) Na2ZnO2 + H2 | c) Zn(OH)2 + Na2O | d) Na2ZnO2 + Na2O |

1. In the reaction : 2 H2S + SO2 3 S + 2 H2O

|  |  |  |  |
| --- | --- | --- | --- |
| a) H2S has been oxidized | b) SO2 has been oxidized | c) H2S is the oxidizing agent | d) SO2 is the reducing agent |

1. The electrical resistance of a conductor depends upon :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Size of conductor | b) temperature of conductor | c) Geometry of conductor | d) All of these |

1. Which gas is evolved when acids react with metal carbonates?

|  |  |  |  |
| --- | --- | --- | --- |
| a) CO2 | b) H2 | c) NH3 | d) O2 |

1. 1 Volt is equal to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1 J/s | b) 1 J/C | c) 1 N/m | d) 1 C/J |

1. Potential difference between two points in an electric circuit is measured by an instrument called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Battery | b) Ammeter | c) Galvanometer | d) Voltmeter |

1. The defective eye of a person has near point 0.5 m and far point is at 3 m. The power for corrective lens required for (i) Reading purpose (ii) Seeing distant objects, respectively are :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 0.5 D and + 3 D | b) + 2 D and – 1/3 D | c) – 2 D and + 1/3 D | d) 0.5 D and – 0.3 D |

1. According to Joule’s law of heating, the heat produced in a resistor in time ‘t’ is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) H = I2 RT | b) H = IR2 T | c) H = V2 IT | d) All of these |

1. Which of the following is used almost exclusively for filaments of electric lamp?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Copper | b) Silver | c) Tungsten | d) Titanium |

1. The two identical resistors are connected first in series and then in parallel respectively. The ratio of their equivalent resistance would be :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 4 : 1 | b) 1 : 4 | c) 2 : 3 | d) 3 : 2 |

1. If four identical resistors, of resistance 8 ohm, are first connected in series so as to give an effective resistance RS and then connected in parallel so as to give an effective resistance RP, then the ratio of RS/RP is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 32 | b) 12 | c) 0.5 | d) 16 |

1. A few drops of iodine solution were added to rice water. The solution turned blue-black in colour. This indicates that rice water contains :

|  |  |  |  |
| --- | --- | --- | --- |
| a) complex proteins | b) simple proteins | c) fats | d) starch |

1. Oxygen liberated during photosynthesis comes from :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Water | b) Chlorophyll | c) Carbon dioxide | d) Glucose |

1. The blood leaving the tissues become richer in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Carbon dioxide | b) Water | c) Haemoglobin | d) Oxygen |

1. The internal energy reserve in autotrophs is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) glycogen | b) protein | c) starch | d) fatty acid |

1. What is the first enzyme to mix with food in the digestive tract?

|  |  |  |  |
| --- | --- | --- | --- |
| a) pepsin | b) cellulase | c) amylase | d) trypsin |

**Section – B [ 2 X 8 = 16 ]**

1. Write three functions of blood.
2. Explain exothermic reaction with example.
3. Write the units of Electric current , Potential difference and Resistance.
4. Why does it take some time to see objects in a dim room when you enter the room from bright sunlight outside?
5. A person cannot see the objects distinctly, when placed at a distance less than 100 cm. What is the power of the spectacles that should be used to see the objects placed at 25 cm clearly?
6. How is washing soda obtained from baking soda?

**Or**

Explain why an aqueous solution of an acid conduct electricity?

1. It would cost a man Rs 3.50 to buy 1 KWh of electrical energy from the main electricity board. His generator has a maximum power of 2 KW. The generator produces energy at this maximum power for 3 hours. Calculate how much it would cost to buy the same amount of energy from the main electricity board.
2. An object is placed at a distance of 12 cm in front of a concave mirror of radius of curvature 30 cm. List four characteristics of the image formed by the mirror.

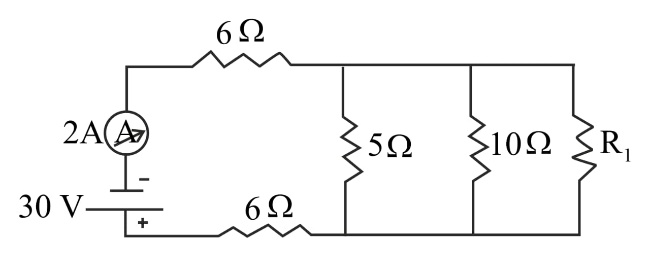
**Section – C [ 3 X 8 = 24 ]**

1. Differentiate between an artery and a vein.
2. A dentist uses a small concave mirror of focal length 3 cm and holds it at a distance of 2 cm from the tooth. What is the magnification of the image?
3. What are nephrons? How is a nephron involved in the filtration of blood and formation of urine?
4. A person is able to see objects clearly only when these are lying at distance between 50 cm and 300 cm from his eye.
5. What kind of defect of vision he is suffering from?
6. What kind of lenses will be required to increase his range of vision from 25 cm to infinity? Explain briefly.
7. Describe the process of nutrition in Amoeba with the help of diagram.

**Or**

Draw and label the parts of the human excretory system.

1. State the function of each of the following parts of human eye : (i) Cornea (ii) Pupil (iii) Retina
2. The resistance of a wire of 0.01 cm radius is 10 . If the resistivity of the material of the wire is 50 x 10 – 8 ohm m, find the length of the wire.
3. In the below circuit, if the current reading in the ammeter ‘A’ is 2 A, what would be the value of R1?



**Section – D [ 5 X 4 = 20 ]**

1. (a) Explain digestion of carbohydrates in human beings.

(b) Explain Photolytic decomposition reaction with example.

1. (a) State the role of ciliary muscles present in our eye.

(b) Identify the defect of vision in each of the following cases and suggest its corrective measure :

|  |  |
| --- | --- |
| (I) The eye lens has become milky and cloudy | (II) The eye has excessive curvature. |
| (III) The eye lens has large focal length (longer than normal) | (IV) Ciliary muscles have weakened |

**Or**

(a) Draw a diagram depicting human alimentary canal and label on it: (i) Gall bladder (ii) Liver (iii) Pancreas.

(b) State the role of Liver and pancreas.

1. (a) Write the balance chemical equations for the following reactions and identify the type of reaction:
2. Thermit reaction, iron (III) oxide reacts with aluminium and gives molten iron and aluminium oxide.
3. Chlorine gas is passed in an aqueous potassium iodide solution to form potassium chloride solution and solid iodine.

(b) Why should curd and sour substances not be kept in brass and copper vessels?

1. (a) What is meant by the statement. ‘The resistance of a conductor is one ohm’.

(b) Define electric power. Write an expression relating electric power, potential difference and resistance.

(c) How many 132 ohm resistors in parallel are required to carry 5 A on a 220 V line?