Roll number..... Number of pages printed :7

Name..... 871(JF)

940

2024

Class 10 (Science)

Time 3 hours 15 minutes Integers: 70

Instructions: The first 15 minutes are allotted for the examinees to read the question paper.

General Instructions – (i) Each question is compulsory.

(ii) The question paper consists of two sections.

(iii) Section 'A' and Section 'B' and Section 'A' have 20 • multiple choice questions to be answered on the O.M.R sheet and Section 'B' contains descriptive questions of 50 marks.

Clause (a)

(Multiple Choice Questions)

1. **The image of an object formed by a concave mirror was found to be virtual, erect and larger than the object. Where should the position of the object be?**
   a) Between the main focus and the center of curvature
   b) At the center of curvature
   c) Beyond the center of curvature 1
   d) Between the pole of the mirror and the main focus
2. **The focal length of a convex mirror is 10 cm. The radius of curvature of the mirror will be** 1
   a) 10 cm
   b) 20 cm
   c) 30 cm
   d) 40 cms
3. **If the speed of light in vacuum is 3×10^8m/s, what is the speed of light in glass (whose refractive index is 1.5)?** 1
   a) 4.5×10^8m /s from
   b) 2.0×10^6m /s from
   c) 3.0×10^6m/s
   d) 2.0×10^8m/s
4. **Images are formed in a healthy eye** 1
   a) On the cornea
   b) On Iris

c) On the pupil

d) On the retina

5. A piece of wire of resistance R is cut into four equal parts. These pieces are then combined in background. If the equivalent resistance of the combination is R', then R/R is equal to R. What is the value of R' ratio? 1

a) 1/16

b) 4

c) 1/4

d) 16

6. Which of the following laws is taken to find the direction of magnetic field caused by a current-carrying conductor? 1

a) Fleming's right-hand rule

b) Fleming's left-hand rule

c) Right-hand thumb rule

d) Ohm's Law

7. If an electric bulb is written 12 V and 30 W, the current flowing through it will be 1

a) 0.4 Ampere

b) 12 Ampere

c) 2.5 Ampere

d) 360 Ampere

8. Acetic acid is a weak acid because 1

a) It has a high water content

b) Its ionization content is low.

c) It is an organic acid

d) It is an inorganic acid

9. The concentration of a hydrochloric acid is 1 10-2× N. pH value of this solution is 1

a) 1

b) 2

c) 3

d) o

10. Propanol is- 1

a) C3H5OH

b) C2H5OH

c) C3H6OH

d) C3H5OH

11. **Which of the following is an unsaturated compound** 1

a) Athene
b) Methane
c) Ethylene
d) Ethyl alcohol

12. **A metal reacts with oxygen to form a compound with a higher melting point. This compound is soluble in water. What could this element be?** 1

a) Calcium
b) carbon
c) silicon
d) iron

13. **Blistered copper has a percentage of copper .** 1

a) 98
b) 2
c) 70
d) 30

14. **A brown shiny element X turns black when heated in the presence of air. The name of this element is -** 1

a) Copper (Cu)
b) Zinc (Zn)
c) Sulphur (S)
d) None of the above

15. **What is required for autotrophic nutrition?** 1

a) Carbon dioxide and water
b) Chlorophyll
c) Sunlight
d) All of the above

16. **Which of the following pairs of vitamins is soluble in water?** 1

a) Vitamin A and B
b) Vitamin B and C
c) Vitamin C and K
d) Vitamin D and B

17. **The brain is responsive** 1

a) To think about
b) For heart flutter
c) To balance the body
d) For all of the above

18. Regulates goitre disease 1

a) Thyroxine
b) Adrenaline
c) Insulin
d) Oxytocin

19. According to Mendel, the gene format of a pure tall pea plant is: 1

a) TT
b) Tt
c) tt
d) T

20. Which of the following is not a part of the female reproductive system in human beings? 1

a) ovary
b) Vasphoid
c) womb
d) Oviduct

Section 'B' : Descriptive Questions

Sub-clause (a)

Short Answer Questions:

1. How is a voltmeter controlled to measure the potential difference between two points in an electric circuit? 4
2. What is nearsightedness? What are the causes of this defect? Which type of lens is used to prevent this? Explain with the help of ray diagram. 4
3. The charge of the electron is coulomb. It is1.6×10^{-19} 1000 Newtons/min. Ampere is moving with a velocity of m/s at an angle of 30° 5×10^{6} to the magnetic field of metres. Calculate the magnetic force on the electron. 4

Detailed Answer Questions

4. What is Ohm's law ? Draw a circuit diagram describing the experiment required to verify this. 6

or

A formula for a convex mirror or where the signs have a common meaning. $\frac{1}{u}+\frac{1}{v}=\frac{1}{f}$ 6

Sub-clause (b)

Short Answer Questions:

1. Write the balanced equation of the following reactions.
   i. Sodium oxide is dissolved in water. 2+2
   ii. $MnO2 + HCl \rightarrow MnCl2 + H2O + Cl2$

2. Write definitions and examples of minerals and ores. 2
3. I.U.P.A.C. of the following compoundsWrite Name- 1+1
   i. CH3-CHOH-CH3
   ii. CH3-CO-CH3

Detailed Answer Questions

4. What do you understand by esterification? Explain with examples. Give the equation for hydrolysis of ethyl acetate. Mention the main uses of acetic acid.6

or

5. i. Bleaching powder is dissolved in water and heated. 2+2+2
   ii. Heat sodium bicarbonate/baking soda.
   iii.On the basis of electrochemical category, explain why copper does not dissolve in dilute sulphuric acid and release hydrogen gas?

Sub-clause (c)

Short Answer Questions:

1. Describe the functions of digestive enzymes found in human beings. 4
2. Define endocrine glands or tubeless glands. Name any two endocrine glands and the hormones secreted from them. 4
3. What is a gene? Write a short note. 4

Detailed Answer Questions

4. Draw a labelled diagram of the male reproductive system of human beings.

or

How many types of transpiration take place in plants? Illustrate the mechanism of stomata transpiration. 6