Standard 10
SCIENCE

Time: 3.00 Hrs.

Maximum Marks: 75

PART - I

12×1=12

Choose the best answer:

1) Where should an object be placed so that a real and inverted image of same size is obtained by a convex lens?
   a) f b) infinity c) 2f d) between f and 2f

2) If a molecule is made of similar kind of atoms, then it is called _____ molecule.
   a) mono atomic b) hetero atomic c) homo atomic d) poly atomic

3) Sound waves travel in air with a speed of about _____ at NTP.
   a) 340×10^8 m/s b) 340 m/s c) 3×10^8 m/s d) 3×10^{-8} m/s

4) Which of the following is the universal solvent?
   a) Acetone b) Benzene c) Water d) Alcohol

5) Alloy used in the manufacturing of pressure cooker is _____.
   a) Brass b) Bronze c) Magnalium d) Duralumin

6) The IUPAC name of an organic compound is 3-methyl butan-1-ol. What type of compound it is?
   a) Aldehyde b) Carboxylic acid c) Ketone d) Alcohol

7) The concept of blood group is derived by _____.
   a) Wiener b) Karl Landsteiner c) William Harvay d) His

8) Male gametes in angiosperms are formed by the division of _____.
   a) Generative cell b) Vegetative cell
   c) Pollen grain mother cell d) Microspore

9) Which one is referred as "Master Gland"?
   a) Pineal gland b) Pituitary gland c) Thyroid gland d) Adrenal gland

10) Life originates from pre-existing life was showed by
    a) Louis Pasteur b) Oparin c) Haldane d) Lamarck

11) **Match the following:**
    a) Solar energy   - i) Flowing water
    b) Petroleum   - ii) Mobile phone
    c) Hydropower   - iii) Inexhaustible energy
    d) Electronic device - iv) Exhaustible energy resource
    a) (1) - (iv), (2) - (iii), (3) - (ii), (4) - (i)
    b) (1) - (iii), (2) - (iv), (3) - (i), (4) - (ii)
    c) (1) - (iii), (2) - (i), (3) - (iv), (4) - (ii)
    d) (1) - (i), (2) - (iv), (3) - (ii), (4) - (iii)

12) **Find the correct pair:**
    a) Gregor Johann Mendel   - Theory of Natura selection
    b) Waldeyer   - Chromosomes
    c) Watson and Crick   - Theory of Evolutio
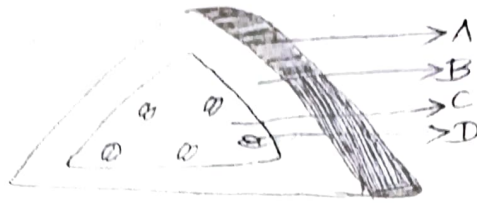   d) Jean Baptiste Lamarck - Law of Heredity

PART - II

Note: Answer any seven questions.
      Question No. 22 is compulsory.

7×2=14

13) Define inertia. Give its classification.
14) Why does the sky appear blue in colour?
15) Write any 2 uses of Ethanol.

17) List out the parasitic adaptations in leech.

18) Identify the parts A, B, C, D in the given figure.

>A
>B
>C
>D

19) Distinguish between somatic gene therapy and germ line gene therapy.
20) How is cancer cell different normal cell?
21) What is sprite?
22) A person with myopia can see objects placed at a distance of 4m. If he wants to see objects at a distance of 20m, what should be the focal length and power of the concave lens he must wear?

PART - III

Note: Answer any seven questions. 7×4=28
Question No. 32 is compulsory.

23) a) Write the symbol for the following component.
    (i) Ground connection   (ii) Resistor
    (iii) Light emitting diode   (iv) A diode
    b) A charge of 12 coulomb flows through a bulb in 5 seconds. What is the current through the bulb?
24) Differentiate the eye defects : Myopia and Hypermetropia
25) a) How is rust formed? Give the equation for formation of rust.
    b) State 2 methods of preventing corrosio.
26) a) What is an amalgam? Give an example.
    b) Mention any two uses of copper.
27) Name the gaseous plant hormone. Mention any three of its physiological effects in plants.
28) a) What is respiratory quotient?
    b) Write the overall reaction for photosynthesis.
29) Explain the structure of chromosome.
30) a) List the theories postulated to explain the origin of life.
    b) Who coined the term 'Ethnobotany'?
31) a) What do you understand by the term phenotype and genotype?
    b) What are allosomes?
32) 'A' is a blue coloured crystalline salt on heating it loses blue colour and gives 'B' When water is added, 'B' gives back 'A'. Identify 'A' and 'B'. Write the equation.

PART - IV

Note: Answer ALL the questions. Draw diagrams wherever necessary. 3×7=21

33) a) State Newton's laws of motion.
                    (OR)
    b) i) What discovered natural radioactivity?
       ii) Write any three features of natural and artificial radioactivity.
       iii) Give any three uses of radio isotopes in the field of agriculture.
34) a) i) Define : Atomicity. Give an example.
       ii) Consolidate the major differences between atoms and molecules.
                    (OR)
    b) i) Differentiate reversible and irreversible reaction.
       ii) What is neutralization reaction? Give an example.
       iii) Give any three characteristics of homologous series.
35) a) i) What are synthetic auxins? Give examples.
       ii) Define triple fusion.
       iii) Name the secondary sex organs in male.
                    (OR)
    b) i) Which enzyme cuts DNA at specific sites?
       ii) Name two maize hybrids rich in amino-acid, lysine.
       iii) Explain smoking hazards and the harmful effects of tobacco.