

10 - STD

SCIENCE

TIME: 2.30 Hrs

Marks : 75

I. Choose the correct answer.

12 x 1 = 12

1. Magnification of a convex lens is
a) positive b) negative c) either positive or negative d) zero
2. Kilowatt hours is the unit of
a) resistivity b) conductivity c) electrical energy d) electrical power
3. In which of the following, no change in mass number of the daughter nuclei takes place?
(i) α decay (ii) β decay (iii) γ decay (iv) neutron decay
a) (i) is correct b) (ii) and (iii) are correct c) (ii) and (iv) are correct d) (i) and (iv) are correct
4. group contains the member of halogen family.
a) 17th b) 15th c) 18th d) 16th
5. The pH of a solution is 3. Its $[\text{OH}^-]$ hydroxyl concentration is
a) $1 \times 10^{-3} \text{ M}$ b) 3 M c) $1 \times 10^{-11} \text{ M}$ d) 11 M
6. Rectified spirit is an aqueous solution which contains about of ethanol.
a) 95.5% b) 75.5% c) 55.5% d) 45.5%
7. The xylem and phloem arranged side by side on same radius is called
a) radial b) amphivasal c) conjoint d) none of these
8. Okasaki fragments are joined together by
a) Helicase b) DNA polymerase c) RNA Primer d) DNA ligase
9. DNA finger printing is based on the principle of identifying sequences of DNA.
a) Single stranded b) mutated c) polymorphic d) repetitive
10. Which one of the following is protein rich wheat variety?
a) Atomita - 2 b) Rathna c) Protina d) Atlas 66
11. Cancer of the epithelial cells is called
a) Leukemia b) Sarcoma c) Carcinoma d) Lipoma
12. Which software is used to create animation?
a) Paint b) PDF c) MS word d) Scratch

II. Answer any seven of the following questions. Q.No. 22 compulsory.

7 x 2 = 14

13. State Newton's second law.
14. State Ohm's law.
15. The aquatic animals live more in cold region. Why?
16. What is rust? Give the equation for formation of rust?
17. How is diastema formed in rabbit?
18. Match the following :

a) Thyroxine	-	Tetany
b) Insulin	-	Aoromegaly
c) Parathormone	-	Simple Goitre
d) Growth hormone	-	Diabetes mellitus

19. What is melastasis?

20. Draw and label the structure of oxysome.

21. What would happen if the habit of wild animals is disturbed?
22. A sound wave has a frequency of 200Hz and a speed of 400 ms^{-1} in a medium. Find the wavelength of the sound wave.

III. Answer any seven of the following questions. Q.No. 32 compulsory.

7 x 4 = 28

23. What are the types of inertia? Give an example for each.
24. Explain the rules for obtaining images formed by a convex lens with the help of ray diagram.
25. What is an echo? a) State two condition necessary for hearing an echo.
b) What are the medical applications of echo?
26. Write notes on a) saturated solution b) unsaturated solution
27. Differentiate reversible and irreversible reactions.
28. Enumerate the functions of blood.
29. Write the physiological effects of gibberellins.
30. Differentiate between Type - 1 and Type - 2 diabetes mellitus.
31. What are the advantages of using biogas?
32. Calculate the grano molecular mass of the following : a) H_2O b) $\text{Ca}_3(\text{PO}_4)_2$

IV. Answer all the questions.

3 x 7 = 21

33. a) i) State Boyle's law ii) Derive the ideal gas equation. (OR)
b) What is a nuclear reactor? Explain its essential parts with their functions.
34. a) Derive the relationship between relative molecular mass and vapour density. (OR)
b) Explain the mechanism of cleansing action of soap.
35. a) i) Define stimulus
ii) How nerve impulses are transferred from one neuron to next neuron? (OR)
b) What are the sources of solid wastes? How are solid wastes managed?