

General Instructions:-

- i) The question paper comprises of two sections A and B. You are to attempt both the sections.
- ii) The candidates are advised to attempt all the questions of Section A separately and Sections B Separately.
- iii) All questions are compulsory.

SECTION - A

1. Name the most stable allotropic form of sulphur. (1)
2. What is the approximate pH of lemon juice? (1)
3. Which gas is evolved when sodium metal is added to ethanol? (1)
4. What is the far point for a young adult with normal vision? (1)
5. What is Astigmatism? How can it be corrected? (2)
6. What is Esterification? Explain by giving an example. (2)
7. What are metalloids? Name two metalloids. (2)
8. In the following reaction –  
$$\text{Mg} + 2\text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$$
  
Explain any two factors by which we can increase the rate of reaction. (2)
9. Draw Flow diagram of Solvay process. (3)
10. Derive mathematically  $T^2 \propto r^3$  (3)
11. A concave lens had focal length of 15cm. At what distance should the object be from the lens so that it forms an image at 10cm from the lens. Also, find the magnification of the lens. (3)
12. Give three advantages of nuclear fusion over nuclear fission reactions (3)
13. How will you prepare ethanoic acid from carbon-monoxide? Give two uses of ethanoic acid? (3)
14. Why is tidal energy not likely to be a potential source of energy? (3)
- 15 .a)Derive an expression for equivalent resistance if three resistance are connected in series.

b) Draw magnetic field lines around a bar magnet.

OR

a) Two lamps one rated 100 W at 220V and the other 60W at 220V are connected in parallel to a 220V supply. What current is drawn from a supply line? (5)

b) Define current. State and define its unit.

16. a) Draw a labeled diagram of Blast Furnace for the extraction of iron.

b) What is the purpose of adding lime stone in the extraction of iron?

OR

a) How will you manufacture sulphuric acid by contact process?

b) Water should never be added to conc.  $H_2SO_4$  Why? (5)

### SECTION - B

17. Which name is given to the juice produced in small intestine? (1)

18. Define analogous organs. (1)

19. Mention two major differences between blood and lymph? (2)

20. Explain the terms – i) Haploid ii) Diploid (2)

21. Explain the following:-

i) What is an ovule? (1)

ii) How does the pollen tube enter the ovule? (1)

iii) What happens to ovule after fertilization? (1)

22. Differentiate between absorption and adsorption of controlling gaseous air pollutants.

OR

What are occupational diseases? Mention the name and cause of any two such diseases. (3)

23. Explain the process of excretion in earthworm. (3)

24. Give reasons for the following: (5)

i) Why does the rate of breathing increase during vigorous exercises?

ii) Why do smokers suffer from emphysema?

iii) Why does the food not enter into trachea while swallowing it?

iv) Why do walls of trachea not collapse when there is less air in it?

v) How is nasal cavity separated from oral cavity?