

**General Science**

*Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.*

**Time: 3 hrs.****Full Marks: 75**

Pass Marks:27 (For Partial Students only)

**Group 'A'****Physics**Attempt any **five** questions. 5x5=25

1. Differentiate between center of gravity and center of Mass. Mention the condition of stable equilibrium. 3+2
2. How are musical sound and noise distinguished from each other ? 5
3. What is the basic differences between the first law and second law of thermodynamics ? Write the significance of second law of thermodynamics. 3+2
4. What are the defects of vision ? How are they remedied ? 2.5+2.5
5. Deduce an expression for the energy stored in a capacitors. Can we give any desired charge to a capacitor ? Explain. 3+2
6. State and explain Ohm's law. 2.5+2.5
7. List the properties of  $\alpha$ ,  $\beta$  and  $\gamma$ -rays. 1+1+3

**Group 'B'****Chemistry**Attempt any **five** questions. 5x5=25

8. State and explain the Graham's law of diffusion of gaseous. 5
9. Compare the properties of ionic and covalent compound by using examples. 5
10. Differentiate between valency and oxidation number. 5
11. Define greenhouse effect. How does it causes global warming ? Write the control measures of greenhouse effect. 2+3

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12. Give the chemistry of quick lime (Cao). 5
13. Define homologous series. Write it's characteristics. 1+4
14. Write the advantages and disadvantages of using chemical fertilizers. 5

**Group 'C'****Biology**Attempt any **three** questions. 3x5=15

15. Differentiate between mitosis and meiosis cell division. Why is mitosis called somatic cell division ? 4+1
16. What is ascent of sap ? Discuss the various theories involved in this phenomenon. 4+1
17. Draw the neat and well labelled diagram of life history and reproduction of Entamoeba. 5
18. Write the different stages, causative agents, symptoms treatment and types of cancer. 1+1+1+1+1
19. What is wild life ? Mention the causes of extinction of wild life. 2+3

**Group 'D'****Astronomy + Geology**Attempt any **two** questions. 2x5=10

20. Summer vegetables can be grown in winter also inside a green house. Give reasons. 5
21. What is the meaning of river profile ? Describe the drainage pattern and drainage density. 1+2+2
22. What are stars ? How does star die ? Explain. 1+4