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Science - Important A Marks

2. Physics

1. State Newton's laws of Motion?
2. Deduce the equation of a force using Newton's second law of motion.
3. State and prove the law of conservation of linear momentum
4. Describe rocket propulsion.
5. List any five properties of light
6. Differentiate the eye defects: Myopia and Hypermetropia.
7. Explain the construction and working of a "Compound Microscope".
8. Derive the ideal gas equation.
9. Explain the experiment of measuring the real and apparent expansion of a liquid with a neat diagram.
10.
 - a. What is meant by electric current?
 - b. Name and define its unit.
 - c. Which instrument is used to measure the electric current
How should it be connected in a circuit?
11.
 - a. State Joule's law of heating
 - b. An alloy of nickel and chromium is used as the heating element.
Why?
 - c. How does a fuse wire protect electrical appliances?
12.
 - a. What are the advantages of LED TV over the normal TV?
 - b. List the merits of LED bulb.
13. What are the factors that affect the speed of sound in gases?
14. What is an echo?
 - a. state two conditions necessary for hearing an echo.
 - b. What are the medical applications of echo?
 - c. How can you calculate the speed of sound using echo?
15. Compare the properties of α , β , γ radiations?
16. What is nuclear reactor? Explain its essential parts with their functions?

Chemistry

1. Give the salient features of "Modern atomic theory".
2. Derive the relationship between Relative molecular mass and Vapour density.
3. The electronic configuration of metal A is 2, 8, 18, 1. The metal A when exposed to air and moisture forms B a green layered compound. A with con. H_2SO_4 forms C and D along with water. D is a gaseous compound. Find A, B, C and D.
4. Explain smelting process.
5. Write note on i) saturated ii) unsaturated solution.
6. Write notes on various factors affecting solubility.
7. In what way hygroscopic substance differ from deliquescent substance.
8. What are called thermolysis reaction?
9. Explain the types of double displacement reactions with example.
10. How does pH play an important role in everyday life?
11. What is a chemical equilibrium? What are its characteristics?
12. What are called homologous series? Give any three of its characteristics?
13. Arrive at, systematically, the IUPAC name of the compound.
14. How is ethanol manufactured from sugarcane?
15. Explain the mechanism of cleansing action of soap.

Biology

1. How does the light dependent reaction differ from the light independent reaction? What are the end products and reactants in each? Where does each reaction occur within the chloroplast?
2. How does locomotion take place in leech?
3. Explain the main reproduction system of rabbit with a labelled diagram.
4. How do plants absorb water? Explain.
5. What is transpiration? Give the importance of transpiration.
6. Why are leucocytes classified as granulocytes and agranulocytes? Name each cell and mention its functions.
7. Differentiate systole and diastole.
8. Initiation and conduction of heart beat.
9. Enumerate the functions of blood.
10. With a neat labelled diagram explain the structure of a neuron.
11. Illustrate the structure and the functions of brain.
12. Classify the neurons based on its structure.
13. Describe an experiment which demonstrates the growth stimulating hormone is produced at the tip of coleoptile.
14. Write the physiological effects of gibberellins.
15. Where are estrogens produced? What is the role of estrogens in the human body?
16. With a neat labelled diagram describe the parts of a typical angiospermic ovule.
17. What are the phases of menstrual cycle? Indicate the changes in the ovary and uterus.
18. Explain with an example the inheritance of dihybrid cross. How is it different from monohybrid cross?
19. How is the structure of DNA organised? What is the biological significance of DNA?
20. Natural selection is a driving force for evolution - How?

21. How do you differentiate homologous organs from analogous organs?
22. Describe mutation breeding with an example.
23. With a neat labelled diagram explain the techniques involved in gene cloning.
24. Discuss the importance of biotechnology in the field of medicine.
25. Change in lifestyle is a risk factor for occurrence of cardiovascular diseases. Can it be modified? If yes, suggest measures for prevention.
26. How does rainwater harvesting structure recharge ground water?
27. Enumerate the importance of forest?
28. What are the consequences of soil erosion?
29. What are the sources of solid wastes? How are solid wastes managed?