Sample Paper – 2008
Class – X
Subject - Science

Time: 2 ½ Hrs Maximum Marks: 60

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 Section B separately.
iii) All questions are compulsory.
iv) There is no overall choice. However, internal choice has been provided in two questions of five marks category in Section A and one question of 2 marks category and one question of 3 marks category in Section B. You are to attempt only one option in such questions.
v) Marks allocated to each question are indicated against it.
vi) Questions 1 to 4 in Section A and 17, 18 in Section B are very short answer questions. These are to be answered in one word or one sentence only.
vii) Questions 5 to 8 in Section A and 19, 20 in Section B are short answer questions. These are to be answered in about 30 - 40 words each.
viii) Questions 9 to 14 in Section A and 21 to 23 in Section B are also short answer questions. These are to be answered in about 40 - 50 words each.
ix) Questions 15, 16 in Section A and 24 in Section B are long answer questions. These are to be answered in about 70 words each.

SECTION – A

1. How is the strength of the magnetic field at a point near a wire related to the strength of the electric current flowing in the wire? [1]

2. Calculate the resistance of a conductor if the current flowing through it is 0.2 ampere when the applied potential difference is 0.8 volt. [1]

3. Define pH. [1]

4. What is annealing? [1]

5. State one point of difference between a natural satellite and an artificial satellite. Name the type of orbit suitable for a geostationary satellite. [2]

6. Give one example of a nuclear fusion reaction. Describe one method for making such reactions possible. [2]

7. Define allotropy. Write the allotropes of sulphur. [2]

8. Name the functional groups present in the following compounds.
(i) $CH_3CH{=}O$ (ii) CH_3CH_2OH
(iii) $CH_3CO\text{-}CH_3CH_3$ (iv) CH_3COOH [O.5x 4]

9. In case of artificial satellites what are 'equatorial' and 'polar' orbits? Which type of these satellite orbital will be suitable for collecting data for weather prediction and why? [3]

10. A 5cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 20cm. The distance of the object from the lens is 30cm. Find the (i) position,
(ii) Nature and (iii) size of the image formed. [3]

11. Draw ray diagram to show the formation of images when the object is placed in front of a concave mirror.
(i) Between its pole and focal point.
(ii) Between its centre of curvature and focal point. [3]

12. What are the various factors which affect the rate of a chemical reaction? Does a catalyst undergo any change at the end of the reaction? [3]

13. Give equations for the following: [1 x 3]
(i) Action of hot concentrated nitric acid or sulphur
(ii) Action of NH_4OH on $AlCl_3$
(iii) A mixture of ammonia and oxygen gases is passed over platinum heated to about *1073* K.

14. Carry out the following conversions stating the essential conditions. [1.5 x 2]
(i) acetone to acetic acid (ii) cumene to phenol

15. On what principle does a solar heating device operate? Draw a labeled schematic diagram for a solar cooker. The solar constant at a place is 1.4 kW/m^2. How much solar energy will be received at this place per second over an area of 5 m^2? [5]

OR

What is the main basic cause for winds to blow? Name a part of India where wind energy is commercially harnessed. Compare wind power and power of water flow in respect of generating mechanical and electrical energies.

16. What are the two types of polymerization? What is the monomer of natural rubber? What is vulcanization f rubber? What is the advantage of using vulcanized rubber over natural rubber? [5]

OR

(a) Carry out the conversions, stating the essential conditions
(i) ethanol to ethanal
(ii) ethanol to ethanoic acid
(iii) propanone to propan-2-01
(b) What's meant by refining of metals? Name any two methods used for refining of metals? [3+1+1]

SECTION – B

17. What are the functions of saliva? [1]

18. Define parthenogenesis. [1]

19. What is a cardiac cycle? [2]

20. Give the differences between DNA and RNA. [2]

21. Draw a diagram of human alimentary canal starting form month and ending at anus. Label at least six parts. [3]

OR

Explain the peripheral nervous system in human beings. [3]

22. Give the differences between respirations and breathing. [3]

23. Explain main types of sources of water pollution. [3]

OR

Explain briefly the different types of tropic movements in plants. [3]

24. What are homologous organs? How do they differ form analogous organs? How does the study of comparative anatomy provide evidence in favour of organic evolution? [5]