Sample Paper – 2007
Class – X
Science

Max Marks: 60 ***Max Time 2.1/2***

SECTION A

Q.1 The refractive indices of two different media are 2 and 1.5 with respect to Air. Light of 200nm wavelength traveling through the rarer medium enters the denser medium. Calculate the wavelength of light in denser medium.

Q.2 Why certain metals like aluminum and zinc are not corroded even when kept open in air whereas iron gets rusted very easily?

Q.3 Suppose you are facing one end of a solenoid, such that the current flowing through it is in the clockwise direction. What kind of magnetic polarity is produced on the end against you?

Q.4 What is formalin? Give the IUPAC name of its main constituent

5.Two similar charges 'A' and 'B' are kept at a distance of 2cm from each other. By what amount the repulsive force between the two charges increase or decrease if the distance between them is reduced to half.

6.Why a sample of cheese or butter get spoiled rapidly in summers as compared to winters?

7. (1)What do you understand by power of accommodation of the eyes.
(ii)Give two causes for the eye defect occurring due to myopia.

8. (i) What is the effect of temperature , on a chemical reaction?

(ii) Show graphically , the rate of the reaction between granulated zinc and dilute HCl at 293K and 308K.

9. (a) How will you express the rate of reaction of given reaction - $3B_2C_4 \rightarrow 6BC + 3C_2$

(b) For the given reaction if the concentration of BC increases by 4.0×10^{-4} moles / lt. in 8 seconds then

(i) Calculate the rate of reaction **(ii)** Calculate the decreases in the concentration of B_2C_4 in the same time.

Q.10 State the use of following in making a solar cooker -

(a) Thermocol **(b)** A glass sheet polished by silver from one side **(c)** Black painted surface

11. 1.2×10^{22} of uranium (nuclei) undergo fission and the produced energy is grabed by some water due to which its temperature rises by $100^{O}C$. Calculate the mass of water. [Given specific heat of water = 4200 J/kg^{0}C, Energy released per fission = 3.2×10^{-11} J]

12. . (i)Name the organic compound that is used for preserving biological specimens and give it's formula.
(ii)What happens when ethanol is oxidized in the presence of chromic anhydride. Give the equation
.(iii) What is Decarboxylation? Write an equation to support the answer.

13. What do you mean by liquation method & oxidative refining method ?

14.a) Name the device, which converts mechanical energy into electrical energy. State the principle on which it works.
(b) On what factors does the force experienced by a current carrying conductor placed in a uniform magnetic field depend?

15. Compound A is a constituent of vinegar. Compound B is used to prepare compound B. Compound A turns blue litmus to red, and consumption of compound B if harmful to health.

(a) Identify A and B.

(b) Write the name and formulae of the functional groups present in A and B.

(c) Write the equation representing the manufacture of B from A.

16.A bulb is rated at 200V-100W. What is its resistance? Five such bulbs burn for 5 hours. What is the electrical energy consumed? Calculate the cost if the rate is Rs. 2.50 per unit.

Section B

Q.17 Which organs in human body produce haploid cells through the division of diploid cells?
18. Who said that during the embryonic development of any individual whole evolutionary history is repeated.
19. Name any two organs that are homologous to human hand. To which category of organs would you place wings of birds and wings of insects?
20. Give one word for the following -

(a) Cell structure that produces ATP during light reaction in plants.

(b) The mode of obtaining food in amoeba. **(c)** Production of fruits without fertilization

(d) Stoppage of menstrual flow in females at elder age.

21. Which type of pollination is more likely to promote variation? Why? Give two major agents engaged in pollination

and give two disadvantages of this method of pollination.

22. What does PUC stand for? State any four methods which can be applied to reduce the pollution level in the surroundings.

23. With the help of a neat and labelled diagram explain the mechanism of nerve impulse transfer from one neutron to the other.

24. . (a) What is the age of puberty in boys and girls?

(b) Define menarche and menopause.

(c) "Population control measures are necessary for the development of the country". Comment on this statement.

Or

Explain what happens during light reaction of photosynthesis? Draw the outline scheme of dark reaction and point

out- **(a)** The compound considered as CO_2 accepter

(b) The Co-enzyme which is reduced during glucose formation -