

CBSE SAMPLE PAPER -2011

**CBSE MODEL TEST PAPER-SCIENCE****SECTION-A**

- Q1 (a) What is fertilization? Distinguish between external fertilization and internal fertilization.  
(b) What is the site of fertilization in human beings? Define the terms:
- (1) Vestigial organs (11) Sex chromosome
- Q2. What is ovulation? When does it take place in the human female?
- Q3. Why do we use convex mirror as a side-view mirror in cars?
- Q4. Give the names of the functional groups.  
(a) -CHO (B) C=O
- Q5. Complete the following equations and write the names of products so formed:
- (a)  $\text{CH}_3\text{COONa} + \text{NaOH} \xrightarrow{\text{heat}}$  \_\_\_\_\_  
(b)  $\text{C}_2\text{H}_5\text{OH} + \text{O}_2 \xrightarrow{\text{AlkMnO}_4}$  \_\_\_\_\_  
(c)  $\text{CH}_3\text{COOH} + \text{C}_2\text{H}_5\text{OH} \xrightarrow{\text{Con. H}_2\text{SO}_4}$  \_\_\_\_\_
- Q6. Explain the mechanism of the cleaning action of soaps.
- Q7. What is the effect of DNA copying which is not perfectly accurate on the reproduction process?
- Q8. Give three points of difference between Mendeleev's periodic table and the Modern periodic Table.
- Q9. Draw a labelled diagram of human male reproductive system.
- Q10. A concave lens has focal length of 20cm. At what distance from the lens a 5 cm tall object be placed so that it forms an image at 15 cm from the lens? Also calculate the size of the image formed.
- Q11. Give the reasons for the following:
- (a) The sun can be seen about two minutes before actual sunrise.  
(b) We cannot see an object clearly if it is placed very close to the eyes.
- Q12. State two problems caused by biodegradable waste that we generate in our daily life.
- Q13. Why should we conserve forests? Suggest any two ways to conserve forests.
- Q14. What will be the formula and electron dot structure of cyclopentane?
- Q15. (a) Name the compound  $\text{CH}_3\text{COOH}$  and identify its functional group.  
(b) Give a chemical test to identify this compound.
- Q16. (a) What are non-biodegradable wastes? Give examples.  
(b) Suggest three ways to maintain a balance between environment and development to survive.
- Q17. How is ozone formed in the upper atmosphere? Which compounds are responsible for the depletion of ozone layer?

Q18. Draw a labelled diagram of human male reproductive system.

Q19. What is genetics?

(a) Give the common name of the plant on which Mendel performed his experiments.

(b) what for did Mendel use the term factors and what are these factors called now?

(c) What are genes? where are the genes located?

(d) List two advantages of sexual reproduction.

Q20. (1) Calculate the difference in the formulae for:

(a)  $\text{CH}_3\text{OH}$  and  $\text{C}_2\text{H}_5\text{OH}$

(b)  $\text{C}_2\text{H}_5\text{OH}$  and  $\text{C}_3\text{H}_7\text{OH}$

(c)  $\text{C}_3\text{H}_7\text{OH}$  and  $\text{C}_4\text{H}_9\text{OH}$

(11) Is there any similarity in these three?

(111) Arrange these alcohols in the order of increasing carbon atoms to get a family.

Q21. (1) What is meant by the 'persistence of vision'? we are able to see the movie picture in a cinema hall. How does this happen?

(11) What is long-sightedness or hypermetropia? what causes long-sightedness? How is long-sightedness corrected?

Q22. (1) What is a homologous series of compounds? List any two characteristics of a homologous series.

(11) What would be observed on adding a 5% solution of alkaline potassium permanganate solution drop by drop to some warm ethanol taken in a test tube?

(111) How would you distinguish experimentally between an alcohol and a carboxylic acid on the basis of a chemical property?

Q23. List any two differences between pollination and fertilisation.

Q24. Name the part of our eyes that helps us to focus near and distant objects in quick succession.

Q25. What is hypermetropia? Draw a ray diagram to show how this defect can be corrected using a lens.

Q26. State two characteristic features of carbon which when put together give rise to a large number of carbon compounds.

Q27. The outer surface of a hollow sphere of aluminium of radius 50 cm is to be used as a mirror. what will be the focal length of this mirror? what type of spherical mirror will it provide?

Q28. Give one example each of characters that are inherited and the ones that are acquired in humans. Mention the difference between the inherited and the acquired characters.

Q29. What is the nature of the image formed by a concave mirror if the magnification produced by the mirror is +3?

Q30. What is myopia? Draw a ray diagram to show how it can be corrected using a lens.

- Q31. Between which two points of a concave mirror should an object be placed to obtain a magnification of -3?
- Q32. Explain why a ray of light passing through the centre of curvature of a concave mirror gets reflected along the same path.
- Q33. With the help of diagrams show the different stages of binary fission in Amoeba.
- Q34. Write the full form of DNA. Name the part of cell where it is located .Explain its role in the process of reproduction of the cell.
- Q35. How is ozone formed in the higher levels of atmosphere? "Damage to the ozone layer is a cause of concern." justify this statement.
- Q36. At what distance should an object be placed from a convex lens of focal length 18 cm to obtain an image at 24 cm from it on the other side .what will be the magnification produced in this case?
- Q37. Explain vegetative propagation with the help of two examples. List two advantages of vegetative propagation?
- Q38. What is a homologous series ? Give one example.
- Q39. At what distance should an object be placed from a lens of focal length 25 cm to obtain its image on a screen placed on the other side at a distance of 50 cm from the lens ?what will be the magnification produced in this case?
- Q40. Why are soaps ineffective in hard water?
- Q41. Explain the phenomenon of "biological magnification ".How does it affect organisms belonging to different trophic levels particularly the tertiary consumers?
- Q42. Name the functional group of organic compounds that can be hydrogenated.With the help of a suitable example explain the process of hydrogenation mentioning the conditions of the reaction and any one change in physical property with the formation of the product.Name any one natural source of organic compounds that are hydrogenated.
- Q43 Complete the following reactions:- (a)  $\text{CH}_3\text{CH}_2\text{OH} + \text{Na} \longrightarrow$  (b)  $\text{CH}_3\text{CH}_2\text{OH} + \text{O}_2 \longrightarrow$ —aircombustion—  
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- Q44. An organic compound 'A' is widely used as a preservative in pickles and has a molecular formula  $\text{C}_2\text{H}_4\text{O}_2$ .This compound reacts with ethanol to form a sweet smelling compound 'B'. (a) Identify the compound 'A' (b) write the chemical equation for its reaction with ethanol to form compound 'B' . (c) How can we get compound 'A' back from 'B'? (d) Name the process and write corresponding chemical equation. (e) which gas is produced when compound 'A' reacts with washing soda? Write the chemical equation.
- Q45. Draw ray diagrams to show the formation of a three times magnified (1) real image (11) virtual image of an object kept in front of a converging lens .Mark the positions of object,F,2F,O and position of image clearly in the diagram. An object of size 5 cm is kept at a distance of 25 cm from the optical centre of a converging lens of focal length 10 cm .Calculate the distance of the image from the lens and size of the image.

Q46 Name a form of acetic acid which is used for pickling salads.

Q47. A ray of light travelling in a medium falls normally on the surface of another medium . while entering the second medium,it:- (a) goes straight into the second medium (b) bends away from the normal ((c) bends towards the normal (d) does not enter the second medium at all

Q48. Acetic acid was added to a solid x kept in a test tube .Acolourless,odourless gas y was evolved.The gas was passed through lime water ,which turned milky. it was concluded that :- (a) solid x is sodium hydroxide and the gas y is  $\text{CO}_2$  (b) solid x is sodium bicarbonate and the gas y is  $\text{CO}_2$  (c) solid x is sodium acetate and the gas y is  $\text{CO}_2$  (d) solid x is sodium bicarbonate and the gas y is  $\text{SO}_2$

Q49. A student dissolved 2 gram of sugar in 20 ml of distilled water in beaker A .He dissolved 5 gram of sugar in 50 ml of distilled water in beaker B.Then he dropped a few raisins in each beaker.After two hours,he found the raisins have: (a)swollen in both (b) shrunken in both (c) swollen in A and shrunken in B (d) shrunken in A and swollen in B