

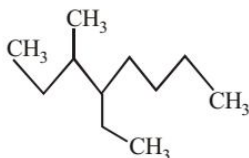
**Sample Question Paper 2020 – 1**  
**Science - Class – X****Time allowed: 03 Hours****Maximum Marks: 80****General Instructions:**

- I. The Question paper comprises of three Sections A, B and C. You have to attempt all the sections.
- II. All Questions are compulsory but some questions have internal choice.
- III. Question number 1 to 20 in Section - A are one - mark questions. Question number 1 to 10 are multiple choice questions. Each has four choices (a), (b), (c) and (d) out of which only one is correct. Question number 11 to 20 are very short answers (VSA) and Assertion-Reasoning. These are to be answered in brief.
- IV. Question number 21 to 30 in Section - B are three marks questions. These are to be answered in about 50 words each.
- V. Question number 31 to 36 in Section - C are five marks questions. These are to be answered in about 70 words

**SECTION - A**

1. In which mirror does one find the image long and thin?  
(a) Concave mirror (b) Convex mirror (c) Cylindrical mirror (d) Parabolic mirror
2. An object absorbed all the seven colours and does not reflect even one. Identify the colour which is not reflected?  
(a) White (b) Black (c) Pink (d) Yellow
3. Which is not an endangered animal?  
(a) Asiatic lion (b) Great Indian vulture  
(c) King cobra (d) Cat
4. Which of the following options is false about a soap?  
(a) The soap solution in water is neutral and can be used to wash all kinds of fabrics.  
(b) Soap forms lather only in soft water.  
(c) Soap is a metallic salt of higher fatty acids.  
(d) Soap cannot be used in slightly acidic medium.
5. The resistance of a conducting wire doesn't depend upon:  
(a) Area of cross section (b) Length  
(c) Temperature (d) Voltage applied
6. Which of the following method of multiplication occurs in *Yeast* and *Hydra*?  
(a) Budding (b) Fragmentation (c) Binary fission (d) Vegetative reproduction
7. When element M of IA group reacts with water, it gives:  
(a)  $\text{MOH} + \text{O}_2$  (b)  $\text{MOH} + \text{H}_2\text{O}$  (c)  $\text{MOH} + \text{H}_2$  (d)  $\text{MH} + \text{H}_2$
8. The book 'Origin of Species' was written by:  
(a) Darwin (b) Lamarck (c) Mendel (d) Hugo de Vries

9. The correct name of the given compound is:



- (a) 2, 3-diethyl heptane (b) 5-ethyl-6-methyl octane  
 (c) 4-ethyl-3-methyl octane (d) 3-methyl-4-ethyl octane
10. Match column-I with column-II and select the correct answer using the codes.

Column-I		Column-II	
A.	MCB	P.	Filament
B.	Electromagnet	Q.	Element
C.	Electric kettle	R.	Electric bell
D.	Electric bulb	S.	Safety device

- (a) A-S; B-R; C-Q; D-P (b) A-P; B-Q; C-R; D-S  
 (c) A-R; B-Q; C-P; D-S (d) A-Q; B-S; C-R; D-P
11. Name a crystalline salt which does not contain water of crystallization.  
 12. Name the plant hormone that brings about falling of leaves and fruits.  
 13. Name two alloys which are used for making permanent magnet.  
 14. Which one is more reactive, Ag or Pt ?

OR

Why is double displacement reaction named so?

15. Name the respiratory organ of a fish.  
 16. What are homologous organs?

OR

What are analogous organs?

17. Name two natural indicators.

**DIRECTIONS :** Each of these questions contains an Assertion followed by Reason. Read them carefully and answer the question on the basis of following options. You have to select the one that best describes the two statements.

- (a) If both Assertion and Reason are correct and Reason is the correct explanation of Assertion.  
 (b) If both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.  
 (c) If Assertion is correct but Reason is incorrect.  
 (d) If Assertion is incorrect but Reason is correct.

18. **Assertion:** Coal gas is a mixture of methane, hydrogen and carbon monoxide.  
**Reason:** It is obtained when coal is burnt in excess of air.
19. **Assertion:** Aluminium and bromine form  $AlBr_3$  as a stable binary compound.  
**Reason:** Aluminium is a group 13 element while bromine is a group 17 element.
20. **Assertion:** Runners are underground stem.  
**Reason:** Runners bear nodes and internodes.

**SECTION - B**

21. (a) What are redox reactions?  
(b) Why is the reaction between manganese dioxide and hydrochloric acid called a redox reaction?  
(c) Identify the oxidising agent and the reducing agent in the above reaction.
22. (a) Identify the substances that are oxidised and the substances that are reduced in the following reactions.
- (i)  $\text{ZnO (s) + C (s)} \longrightarrow \text{Zn (s) + CO (g)}$
- (ii)  $\text{CuO (s) + H}_2\text{(g)} \longrightarrow \text{Cu (s) + H}_2\text{O (l)}$
- (b) Name the oxidising and reducing agent in the following reaction:
- $$2\text{H}_2\text{S} + \text{SO}_2 \longrightarrow 2\text{H}_2\text{O} + 3\text{S}\downarrow$$
23. (a) What is rancidity? What is the general name of chemical which are added to fat and oil containing food so as to prevent the development of rancidity?  
(b) Metal X becomes green when left in air, turns black when heated in air. Name the metal and the compounds formed in both the cases?
24. Draw a sketch to show the magnetic lines of force due to a current carrying solenoid.

**OR**

What is the nature of graph between current and potential difference? What does it indicate?

25. A person having short sightedness (near sight) unable to see clearly beyond 2 m develops presbyopia by which he is unable to read a book held closer than 1m. Prescribe lenses of suitable power for distant vision and near vision.
26. Name the main organs of the human digestive system in the order they participate in the process of digestion. Describe how digestion of carbohydrates take place in our body.

**OR**

- (a) Where does digestion of fat take place in our body?  
(b) How is small intestine designed to absorb digested food?
27. What concepts are behind the management of resources like coal, petroleum etc?
28. A gas is produced when conc.  $\text{H}_2\text{SO}_4$  is added to solid sodium chloride solution taken in a test tube. The gas coming out through the delivery tube is passed over a dry blue litmus paper and then over a moist blue litmus paper. What would you observe? Give reason for your observation and write the corresponding balanced chemical equation.

**OR**

Write the chemical equation of the reaction with an example each in which the following change has taken place :

- (a) Change in colour  
(b) Change in temperature  
(c) Formation of precipitate
29. Distinguish between translocation and transpiration.
30. What is power of accommodation? Explain.

**SECTION - C**

31. (a) Describe how the sex of an offspring is determined in the human beings.  
(b) Define the terms unisexual and bisexual giving one example of each.
32. (a) Describe the parts of a flower.  
(b) Draw a labelled diagram of the longitudinal section of a flower.

33. (a) Give reasons for the following:
- (i) Metals are regarded as electropositive elements.
  - (ii) Articles made of aluminium do not corrode even though aluminium is an active metal.
- (b) On placing a piece of zinc metal in a solution of mercuric chloride it acquires a shining silvery surface but when it is placed in a solution of magnesium sulphate no change is observed. Give reason.

**OR**

- (a) When a metal  $X$  is treated with cold water, it gives a basic salt  $Y$  with molecular formula  $XOH$  (molecular mass = 40) and liberates a gas  $Z$  which easily catches fire. Identify  $X$ ,  $Y$  and  $Z$  and also write the reaction involved.
- (b) Which two metals do not corrode easily? Give an example in each case to support that:
- (i) Corrosion of some metals is an advantage.
  - (ii) Corrosion of some metals is a serious problem.
34. (a) Draw a diagram depicting human alimentary canal and label gall bladder, liver and pancreas.
- (b) State the roles of liver and pancreas.
- (c) Name the organ which performs the following functions in humans:
- (i) Absorption of digested food
  - (ii) Absorption of water
35. Three 250 watt heaters are connected in parallel to a 100 volt supply. Calculate :
- (a) the total current taken from the supply.
  - (b) the resistance of each heater.
  - (c) the energy supplied in kWh to the three heaters in 5 hours.

**OR**

- (a) Explain how the resistance of the conductor vary if:
- (i) Area is halved
  - (ii) Length is doubled
  - (iii) Area is doubled
  - (iv) Both area and length are doubled
- (b) Calculate the resistance of an aluminium wire of length 60 cm and cross-sectional area  $1\text{mm}^2$ , the specific resistance of  $2.6 \times 10^{-8} \Omega\text{m}$ .
36. (a) Explain the following terms related to spherical lenses.
- (i) Optical centre
  - (ii) Centre of curvature
  - (iii) Focal length
- (b) A converging lens has focal length of 12 cm. Calculate at what distance should the object be placed from the lens so that it forms an image at 48 cm on the other side of the lens.