

**DELHI PUBLIC SCHOOL JAMMU**  
**Sample Questions for Term Examination 2019-20**  
**(as per the pattern of CBSE sample paper)**

**Class X**

**Subject: Physics**

**1 MARK QUESTION**

1. The basic cause of refraction is the change in the speed of light in going from 1 medium to another. For example when a ray of light travelling in air enters into glass the speed of light decreases. Therefore bending of light occurs at the interface of air and glass. Similarly when the ray of light travelling in glass enters into air the speed of light increase. Therefore refraction of light occurs at the interface of glass and air. Further the angle of bending of a ray would depend upon the difference in speeds of light in the two medium. Larger the difference in speed of light greater will be the angle of bending and viceversa. For example light will bend through larger angle in going from air to glass then in going from air to water. The speed of light in air is  $3 \times 10^8$  m/s and speed of light in glass is  $2 \times 10^8$  m/s whereas speed of light in water is  $2.25 \times 10^8$  m/s.
  - (a) What is the basic cause of refraction?
  - (b) What happens when a ray of light travelling in glass enters into air?
  - (c) On which principle does the angle of bending depends.
  - (d) Why will the light bends to a larger angle when moving from air to glass then in going from air to water.
2. Image obtained on screen is;
  - (a) Virtual (b) both real and virtual (c) real (d) none of these
3. The colour of light which is deviated the least by a prism in the spectrum of white light is;
  - (a) Red (b) Green (c) Violet (d) Yellow
4. An electric bulb is rated 220V and 100 Watt when it is operated on 110 V. the power consumed will be
  - (a) 100 Watt (b) 75 Watt (c) 50 Watt (d) 25 Watt
5. Which one of following terms does not represents electric power in a circuit
  - (a)  $I^2R$  (b)  $IR^2$  (c)  $VI$  (d)  $VR$
6. The human eye forms the image of an object at its;

- (a) Cornea (b) Iris (c) Pupil (d) Retina
7. The least distance of distinct vision for a young adult with normal vision is about ;  
(a) 25 m (b) 2.5 (c) 26 (d) 2.6
8. The change in focal length of an eye lens is caused by the action of the;  
(a) Pupil (b) Retina (c) Ciliary muscles (d) Iris
9. Which lens is used to correct hypermetropic eye;  
(a) Concave (b) Convex (c) Bifocal (d) Both a and b
10. **Assertion:** Wind farms cannot be set at every place.  
**Reason:** The velocity required for a windmill to function is about 15km/h.  
(a) A (b) B (c) C (d) D

### 3 MARKS QUESTIONS

11. Give difference between conventional and non-conventional sources of energy.
12. Explain the phenomenon of scattering of light. Also state the factors on which colour of scattered light depends.
13. List the two natural phenomenon based on scattering of light.
14. A 4.5cm needle is placed 24cm away from a convex mirror of focal length 30cm. Give the location of the image and its magnification.
15. What is meant by power of accommodation of the eye?
16. What is the far point and near point of the human eye with normal vision?
17. Why is the normal eye not able to see clearly the objects placed closer than 25cm?
18. Why do stars twinkle?
19. Explain why the planets do not twinkle.
20. Why does sun appears reddish early in the morning?
21. What happens to the image distance when we increase the distance of an object from the eye?
22. Why does the sky appear dark instead of blue to an astronaut?

### 5 MARKS QUESTIONS

23. The far point of a myopic person is 80cm in front of the eye. What is the nature and power of the lens required to correct the problem?
24. Explain the concept of atmospheric refraction.
25. State Snell's law of refraction. (b) The refractive index of diamond is 4.26 times. What is the meaning of this statement?
26. Explain the principle and construction of electric motor along with well labeled diagram.

27. At what distance from a concave lens of focal length 20cm, should a 6 cm tall object be placed, so that it forms an image at 15 cm from the lens? Also determine the size of the image formed
28. Define dispersion and give its cause.  
Explain recombination of white light using two prisms.
29. Explain right hand thumb rule , Flemings left hand rule and Flemings right hand rule.
- 30.Explain the principle and construction of electric Generator along with well labeled diagram

**Class:X**

**M.M: 25**

**SUB: CHEMISTRY**

### **Multiple choice questions**

- 31.Sodium carbonate is a basic salt because it is a salt of:
- Strong acid and strong base
  - Weak acid and weak base
  - Strong acid and weak base
  - Weak acid and strong base
- 32.The soap molecule has a
- Hydrophilic head and a hydrophobic tail
  - Hydrophilic tail and a hydrophobic head
  - Hydrophilic head and a Hydrophilic tail
  - Hydrophobic head and a hydrophobic tail
- 33.What are the constituents of solder?
- 34.Why do silver ornaments turn black when exposed to air?
- 35.Which acid is found in ant sting?
- 36.Give an example of photochemical reaction.
- 37.Give an example of Dobereiner's triad.
- 38.What is the difference in number of shells in beryllium and sulphur?
- 39.What is the natural source of oxalic acid?
- 40.What is meant by denatured alcohol?
- 41.Food gets spoiled when kept for long time. Name the phenomenon involved.
- 42.What is anodizing?

**For questions numbers 13, 14 and 15, two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below:**

- If both the assertion and reason are true and reason is the correct explanation of assertion
- If both assertion and reason are true, but reason is not the correct explanation of assertion.

(iii) If assertion is true but reason is false.

(iv) If assertion is false but reason is true.

43. **Assertion:** Quick lime reacts vigorously with water releasing large amount of heat.

**Reason:** The above chemical reaction is an exothermic reaction.

44. **Assertion:** Graphite is slippery to touch.

**Reason:** The various layers of carbon atoms in graphite are held together by weak van der Waal's forces.

45. **Assertion:** food cans are coated with tin and not with zinc.

**Reason:** zinc is more reactive than tin.

### 3marks questions

46. Explain the electrolytic refining of copper with the help of a labelled diagram.

47. What is meant by electrolytic reduction? How is sodium obtained from its molten chloride? Explain.

48. Explain why calcium metal after reacting with water start floating on its surface. Write the chemical equation for the reaction.

49. Write the balanced chemical equations for the following reactions.

a) Natural gas burns in air and combines with oxygen to form carbon dioxide.

b) During respiration glucose combines with oxygen and forms carbon dioxide and water.

50. What are redox reactions? Identify the substances that are oxidized and the substances are reduced in the following reactions

a)  $\text{H}_2\text{S} + \text{Cl}_2 \rightarrow \text{HCl} + \text{S}$

b)  $\text{PbO} + \text{C} \rightarrow \text{Pb} + \text{CO}_2$

51. Account for the following.

a) Antacid tablets are used by a person suffering from stomach pain.

b) Distilled water does not conduct electricity whereas rain water does.

c) Sodium hydroxide cannot be kept in aluminium containers.

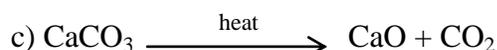
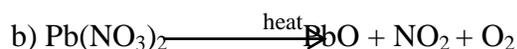
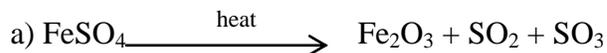
52. Write equations for the reaction of:

a) Iron with Steam

b) Aluminum with Oxygen

c) Magnesium with Dilute Hydrochloric Acid

53. State what happens when a concentrated solution of sodium chloride (brine) is electrolyzed?
54. Write the equation involved. Name the process and mention one use of each product.
55. Explain why detergents are better cleansing agents than soaps in hard water.
56. A mixture of oxygen and ethyne is used for welding. Why do you think a mixture of ethyne and air is not used?
57. How is ethene prepared from ethanol? Give the reaction involved in it. What is the role of sulphuric acid in this reaction?
58. Complete the following equation for chemical reaction.



59. Write the limitations of Mendeleev's classification of elements.
60. In a group, reactivity of metals increases while those of non-metals decreases. Explain.
61. Nitrogen (Z=7) and Phosphorus (Z=15) belong to same group -15 of the periodic table .
- Write the electronic configuration of these two elements.
  - Which of these two is more electronegative?
  - Which of these two is larger in size?

### 5marks questions

62. a) How is plaster of Paris chemically different from gypsum? How can they be interconverted? Write two uses of plaster of Paris.
- b) What happens when an acid or a base is added to water. Why does the beaker appear warm? Why should we always add acid or base to water and not water to acid or a base?
63. a) How is baking soda prepared? What does soda acid type extinguishers contain & how does it work?
- b) The soil in a field is basic. Name two materials which can be added to the soil to reduce its basicity.  
Give reason.
64. In what forms are metals found in nature? With the help of examples, explain how metals react with oxygen, water and dilute acids. Also write the chemical equations for the reactions.
65. a) How is manganese extracted from manganese dioxide? Explain with the help of equation.
- b) With the help of suitable example, explain how ionic compounds are formed? State any three general properties of ionic compounds.
66. A compound C with molecular formula  $\text{C}_2\text{H}_4\text{O}_2$  reacts with Na to form a compound R and evolves a gas which burns with a pop sound. Compound C on treatment with alcohol A in presence

of an acid forms a sweet smelling compound S with molecular formula  $C_3H_6O_2$ . On addition of NaOH, it also gives R and water. S on treatment with NaOH solution gives back R and A. Identify C, R, A and S and write the reactions involved.

67. Explain the given reactions with examples.

- Saponification reaction
- Hydrogenation reaction
- Oxidation reaction
- Substitution reaction
- Combustion reaction

Q68. a) A white salt on heating in a boiling tube gives brown fumes and a residue is left behind.

- Name the salt and the residue.
- Write the balanced chemical equation for the reaction and name the type of reaction.

b) Explain corrosion with an example. List two different ways that are used to prevent corrosion.

Q69. a) What happens when carbon dioxide gas is bubbled through lime water?

- in small amount
- in excess

b) List two observations that are noticed when an iron nail is put inside copper sulphate solution.

Write chemical equation for the reaction that occurs.

c) How will you test the presence of hydrogen gas?

Q70. a) How could Modern periodic table remove various anomalies of Mendeleev's periodic table?

- Why do you think noble gases were placed in separate groups?
- In the modern periodic table, which are the metals among the first ten elements.

Q71. a) How does the electronic configuration of an element relate to its position in the modern periodic table?

b) What were the limitations of Newland's law of octaves?

Q72. a) Why does micelle formation take place when soap is added to water? Will a micelle be formed in other solvents such as ethanol also?

- What is the industrial application of hydrogenation?
- Draw the electron dot structure for ethanoic acid.

Q73. a) Describe an activity with diagram to illustrate that the reaction of metal carbonates with acids produce carbon dioxide. Write the equations of all the reactions that take place.

- Name any two forms in which calcium carbonate is found in nature.
- Explain why is hydrochloric acid a strong acid and acetic acid, a weak acid?

Q74. a) A organic compound A on heating with concentrated  $H_2SO_4$  forms compound B which on addition of one mole of hydrogen in presence of Ni forms compound C. One mole of compound C on combustion forms two moles of  $CO_2$  and three moles of  $H_2O$ . Identify the compounds A, B and C and write the chemical equations for the reactions involved.

b) How would you bring the conversion of propanol to propanoic acid?

Q75. An element is placed in 2<sup>nd</sup> group and 3 period of the modern periodic table, burns in presence of oxygen to form basic oxide.

- a) Identify the element
- b) Write the electronic configuration.
- c) Write the balanced equation when it burns in air.
- d) Write the balanced equation when this oxide is dissolved in water.
- e) Draw the electron dot structure for the formation of this oxide.

Q76. a) Give three applications of neutralization reactions.

- b) Why does dry hydrogen chloride gas does not turn blue litmus red, whereas hydrochloric acid does?

**CLASS: X**  
**SUB: BIOLOGY**

**M.MARKS:28**

**MULTIPLE CHOICE QUESTIONS:**

Q77. Mayank's father never bothered to check the brand/contents of the salt he had purchased from the market. Mayank noticed that her sister had developed swollen neck. The doctor advised her to eat Iodised Salt to check Iodine deficiency disease. .

- (a). Name the disease from which Mayank's sister suffered.
- (b). Why the doctor has advised her to eat Iodised Salt?

Q78. Often the road accidents victims faced really a tough time due to the shortage of blood in the hospital.

- (a). Give suggestion to avoid shortage of blood in the blood bank.

Q79. The autotrophic mode of nutrition requires

- (a) carbon dioxide and water.
- (b) chlorophyll.
- (c) sunlight.
- (d) all of the above.

Q80. The xylem in plants are responsible for

- (a) Transport of water .
- (b) Transport of food.
- (c) Transport of amino acids.
- (d) Transport of oxygen.

Q81. The breakdown of pyruvate to give carbon dioxide, water and energy takes place in

- (a) Cytoplasm.
- (b) Mitochondria.

(c) Chloroplast.

(d) Nucleus

Q82. The kidneys in human beings are a part of the system for

(a) Nutrition

(b) Respiration.

(c) Excretion.

(d) Transportation

Q83. All green plants are \_\_\_\_\_.

Q84. All non-green plants and animals are \_\_\_\_\_.

Q85. Heterotrophs depend on \_\_\_\_\_ and other \_\_\_\_\_ for food

Q86. Define respiration.

Q87. Give an example of a plant hormone that promotes growth.

Q88. Which part of the brain maintains posture and equilibrium of the body?

Q89. Name the largest cell present in the human body.

Q90. State the function of epiglottis.

Q91. What is the function of cerebrospinal fluid?

Q92. State the main function of abscisic acid in plants.

Q93. Which hormone helps in lowering the level of blood glucose in human beings?

### **3 MARKS QUESTIONS**

Q94. What is transpiration ? List its two functions.

(a) What is translocation ? Why is it essential for plants ?

(b) Where do the substances in plants reach as a result of translocation ?

Q95. What is carpel ? Write the function of its various parts.

Q96.(a) Why is the use of iodised salt advisable ? Name the disease caused due to deficiency of iodine in our diet and state its one symptom.

(b) How do nerve impulses travel in the body ? Explain.

Q97.(a) What are homologous structures ? Give an example.

(b) “The sex of a newborn child is a matter of chance and none of the

parents may be considered responsible for it.” Justify this

statement with the help of a flow chart showing sex-determination in human beings

### **5 MARKS QUESTIONS**

Q98. Design an experiment to demonstrate hydrotropism.

Q99. What are the components of the transport system in human beings? What are the functions of these components?

Q100. How are involuntary actions and reflex actions different from each other?

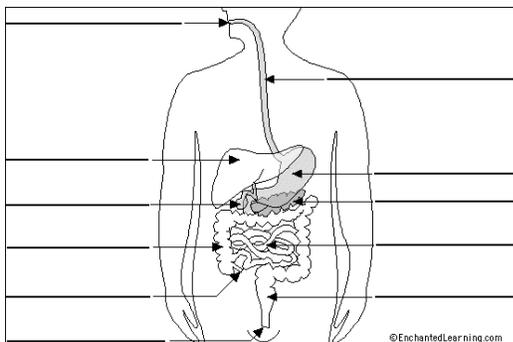
Q101. Compare and contrast nervous and hormonal mechanisms for control and coordination in animals.

Q102. Describe double circulation of blood in human beings. Why is it necessary?

Q103. How does our body respond when adrenaline is secreted into the blood?

Q104. Draw the structure of a neuron and explain its function.

Q105.



a).Identify any two parts from the above diagram

b).Explain the process of digestive system of human beings.

Q106. Will geographical isolation be a major factor in the speciation of a self- pollinating plant species? Why or why not?

Q107. What is the importance of DNA copying in reproduction?

Q108. How does binary fission differ from multiple fission?

Q109. How will an organism be benefited if it reproduces through spores?

Q110. Can you think of reasons why more complex organisms cannot give rise to new individuals through regeneration?

Q111. Why is vegetative propagation practised for growing some types of plants?