

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

**CLASS- IX**  
**SUBJECT-SCIENCE**

**PHYSICS**

**MULTIPLE CHOICE QUESTIONS:**

Q1. Archimedes was the Greek scientist. He discovered the principle, subsequently named after him, after noticing that the water in a bath tub overflowed when he stepped into it. He ran through the streets shouting "Eureka", which means "I have got it". This knowledge helped him to determine the purity of the gold in the crown made for the king. His work in the field of Geometry and mechanics made him famous. His understanding of levers, pulleys, wheels and axle help the Greek army in its war with Roman army. This principle has many applications, it is used in designing ships and submarines, lactometers which are used to determine the purity of a sample of milk and hydrometers used for determining density of liquids, are based on this principle.

- (a) What did Archimedes discover?
- (b) What made Archimedes famous?
- (c) State some applications of Archimedes Principle.
- (d) What do you mean by Lactometers?

Q2. Rocket works on the principle of conservation of;

- (a) Velocity
- (b) Momentum
- (c) Mass
- (d) Energy

Q3. What is the momentum of an object of mass  $M$  moving with velocity  $V$ ?

- (a)  $mv$
- (b)  $mu$
- (c)
- (d)  $ma$

Q4. What is the mass of earth.

- (a)  $5.98 \times 10^{24}$
- (b) 7.36
- (c)  $6.37 \times 10^6$
- (d)  $1.74 \times 10^6$

Q5. An object of mass 15 kg is moving with a uniform velocity of 4 m/s. What is the kinetic energy possessed by the object.

- (a) 100 J
- (b) 93 J
- (c) 120 J
- (d) 150 J

Q6.A force can be completely described by;

- (a)Its direction
- (b)Its magnitude
- (c)Neither magnitude nor direction
- (d) Both (a) and (b)

Q7.Action-reaction forces act;

- (a)On different bodies
- (b)On the same body
- (c)Along different lines
- (d)In the same direction

Q8.The inertia of an object tends to cause the object;

- (a)To increase its speed
- (b)To decrease its speed
- (c)To resist any change in its state of motion
- (d)None of these

Q9.Rocket works on the principle of conservation of;

- (a)Velocity
- (b) Momentum
- (c) Mass
- (d) Energy

Q10.The quantitative definition of force is given by;

- (a)Newton's 2<sup>nd</sup> law
- (b) Newton's 1<sup>st</sup> law
- (c) Newton's 3<sup>rd</sup> law
- (d) None of these

**Q11.Assertion:** Sonar technique is used to determine the depth of the sea and to locate underwater hills.

**Reason:** Sonar is a device that uses ultrasonic waves to measure the distance direction and speed of underwater objects

- (a)A
- (b) B
- (c) C
- (d) D

Q12.Define force and give its SI unit.

Q13.Give difference between balanced and unbalanced forces.

Q14.Define inertia and momentum. Explain how inertia gets affected due to mass?

Q15.Define momentum and give its mathematical relation.

Q16.Define workdone and give its SI unit.

Q17. Give difference between work and workdone.

### 3 MARKS QUESTIONS

Q18. Define momentum and give its mathematical relation.

Q19. State third equation of motion and derive kinetic energy with the help of this equation.

Q20. Give two examples for each type of inertia.

Q21. State and derive the equation for potential energy.

Q22. Find the recoil velocity of a gun if it fires a bullet of mass 50g with velocity 150m/s. (consider mass of gun equal to 2kg)

Q23. How much momentum will a dumb-bell of mass 10kg transfer to the floor it falls from a height of 80cm? (use  $g=10\text{ms}^{-2}$ )

Q24. Define Kinetic energy and find expression for it with neat diagram.

### 5 MARKS QUESTIONS

Q25. Two objects each of mass 2kg are moving in the same straight line but in opposite direction. The velocity of each object is 3m/s before the collision during which they stick together. What will be the velocity of the combined objects after collision?

Q26. State and prove Newton's 2<sup>nd</sup> law. Why Newton's 2<sup>nd</sup> law is called a real law?

Q27. State and prove law of conservation of linear momentum.

Q28. Find the recoil velocity of a gun if it fires a bullet of mass 50g with velocity 150m/s. (consider mass of gun equal to 2kg)

Q29. How much momentum will a dumb-bell of mass 10kg transfer to the floor it falls from a height of 80cm? (use  $g=10\text{ms}^{-2}$ )

Q30. Explain Bell Jar experiment showing sound cannot travel in vacuum.

Q31. State Newton's 3<sup>rd</sup> law of motion. (b) Which would require a greater force – accelerating a 2 Kg mass at  $5\text{ m/s}^2$  or a 4 kg mass at  $2\text{ m/s}^2$

Q32. Explain universal law of gravitation along with neat and clean diagram.

Q33. A stone is allowed to fall from the top of a tower 100 m high and at the same time another stone is projected vertically upwards from the ground with the velocity of 25 m/s. Calculate when and where the 2 stones will meet.

Q34. Draw neat and clean diagram and also explain the structure of human ear.

**Class: IX**

**M.M: 25**

**SUB: CHEMISTRY**

**Multiple Choice questions**

Q35. The method used to separate a dye from blue ink

- (a) evaporation
- (b) sedimentation
- (c) crystallisation
- (d) filtration

Q36. The electron distribution in an aluminium atom is:

- (a) 2, 8, 5
- (b) 2, 8, 3
- (c) 2, 8, 6
- (d) 2, 8, 2

Q37. How would you confirm that a colourless liquid given to you is pure water?

Q38. What is the cause of Tyndall effect?

Q39. Why does a saturated solution become unsaturated on heating?

Q40. Define boiling point.

Q41. What is cation? Give example.

Q42. Which postulate of Dalton's atomic theory can explain law of constant proportions?

Q43. Define homogeneous mixtures.

Q44. Name the sub atomic particles which contribute towards the mass of an atom.

Q45. Who discovered anode rays?

Q46. How will you justify that rusting of iron is a chemical change?

**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:**

- (i) If both the assertion and reason are true and reason is the correct explanation of assertion
- (ii) 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.

**Q47. Assertion:** A solution of table salt in a glass of water is homogeneous.

**Reason:** A solution having different composition throughout is homogeneous.

**Q48. Assertion:** When 10 g of  $\text{CaCO}_3$  is decomposed, 5.6 g of residue is left and 4.4 g of  $\text{CO}_2$  escapes.

**Reason:** Law of conservation of mass is followed.

**Q49. Assertion:** In Rutherford's gold foil experiment, very few  $\alpha$ -particles are deflected back

**Reason:** Nucleus present inside the atom is heavy.

**3marks questions**

Q50 What is the role of the following in water purification system?

- a) Sedimentation tank
- b) Loading tank
- c) Filtration tank

Q51. Differentiate between mixtures and compounds.

Q52. Draw a well labelled diagram showing sublimation of ammonium chloride.

Q53. Calculate the following quantities in 5.6 g of nitrogen. ( atomic mass of N = 14 u )

- (a) Number of moles of  $\text{N}_2$
- (b) Number of molecules of  $\text{N}_2$
- (c) Number of atoms of nitrogen.

Q54. Atom of an element has 17 protons, 17 electrons and 18 neutrons.

- a) Calculate the mass number of the element
- b) Write its electronic configuration.
- c) Find the valency and atomic number of the element

21. Account for the following.

- a) A gas exerts pressure on the walls of the container.
- b) We can easily move our hands in air but to do the same through a solid block of wood, we need a karate expert
- c) Temperature remains constant during the change of state.

Q55. Write the chemical formulae of the following:

- a) Calcium oxide
- b) Aluminium sulphate
- c) Copper nitrate

Q56. How does change in temperature and humidity affect the rate of evaporation?

Q57. Arrange solids, liquids and gases in increasing order of the following properties of matter.

- i) Rigidity
- ii) Diffusion
- iii) Compressibility

Q58. Write the postulates of Dalton's atomic theory.

Q59. Calculate the number of molecules of sulphur ( $S_8$ ) present in 128 g of sulphur.

Q60. What is crystallization? How can this technique be used to purify impure copper sulphate?

Q61. Draw a flow sheet to show the process of obtaining constituent gases from air.

Q62. State the law of constant proportion and explain it giving suitable example.

Q63. What are the limitations of Rutherford's model of atom?

**5marks questions**

Q64. a) Chlorine occurs in nature in two isotopic forms with masses 35 u and 37 u. The percentage of  $^{35}\text{Cl}$  is 75% and of  $^{37}\text{Cl}$  is 25%. Find the average atomic mass of chlorine atom.

b) Give any three applications of isotopes.

Q65. a) What mass of silver nitrate will react with 5.85g of sodium chloride to produce 14.35g of silver chloride and 8.5g of sodium nitrate?

b) Calculate the number of aluminium ions present in 51g of aluminium oxide.

Q66. Describe the process to show that dye used in black ink is a mixture of two or more components with diagram.

Q67. Describe an activity to determine the boiling point of water and melting point of ice.

Q67.. a) Give the postulates of Bohr's atomic model.  
b) What are the limitations of J.J Thomson's model of atom.

Q68. Describe the various steps involved in the purification of water for city water supply.

Q69. a) Define solubility. How does solubility of a solid in water change with temperature?

b) Differentiate between physical and chemical change.

Q70. a) Show diagrammatically the electron distributions in sodium atom and sodium ion and also give their atomic number

b) What are isobars? Give example.

Q71. a) How are particles of matter affected with increasing or reducing pressure at a given temperature?

b)With the help of an example, explain how diffusion of gases in water is essential?

Q72. a) Calculate the mass of  $3.011 \times 10^{24}$  molecules of carbon dioxide gas.

b) Copper oxide was prepared by two methods. In one method 1.75g of copper gave 2.19g of copper oxide while in 2<sup>nd</sup> method 1.14 g of copper produced 1.43 g of copper oxide. Show that the given data illustrates the law of constant proportions.

**CLASS: IX**  
**SUB: BIOLOGY**

**M.MARKS:28**

**MULTIPLE CHOICE QUESTIONS:**

Q73. While performing an experiment in class, Pooja found an animal which has an open circulatory system is blood filled coelomic cavity and has jointed legs?

1a.To which group will Pooja classify this animal?

1b.Name the largest phylum of the animal kingdom and write two characteristics of this group.

Q74. India is a country with three fourth of the population engaged in agriculture. Even though financial conditions of some famers do allow them to take higher level farming practices and improved agriculture technology, yet they are hesitant to use of HYV seeds with traits such as

resistance to disease and pests, high quality that would result finally in higher yield. The Governments' Kisan channel solved all their apprehensions.

2a .What is meant by genetically modified crops?

2b.What are the desired agronomic characters for fodder and cereal crops?

2c. In your opinion what should be done so that the modern agriculture technology is adopted by most of the farmers?

Q75. The cellular component not seen while observing a slide of onion peel under lower Magnification of microscope is \_\_\_\_\_.

- (a) Cell wall
- (b) Chromosome
- (c) nucleus
- (d) cytoplasm

Q76. Shivi, a student of class IX, observed the following structure in the slide under the microscope. The given diagram is \_\_\_\_\_.

- (a) Cardiac Muscle
- (b) Striated muscle
- (c) Collenchymas
- (d) Nerve cell

Q77. A permanent slide is observed by Ryan. He noticed this walled isodiametric cells with a large vacuole. The slide contains \_\_\_\_\_.

- (a) Parenchyma cells
- (b) nerve cells
- (c) sclerenchyma cells
- (d) collenchymas cell

Q78. The largest cell in the human body is -

- (a) Nerve cell
- (b) Muscle cell
- (c) Liver cell
- (d) Kidney cell

Q79. Parenchyma is a type of \_\_\_\_\_.

- (a) Complex tissue
- (b) Simple tissue
- (c) Xylem
- (d) Phloem

Q80. Striated muscle is also called \_\_

- 1. Cardiac muscles
- 2. Smooth muscles
- 3. Skeletal muscles
- 4. Involuntary muscles

Q81. Write full form of DNA and ATP.

Q82..Where does stomata located in plant?

Q83. Define health

Q84.What is meant by Animal husbandry?

Q85.What do we get from cereals, pulses, fruits and vegetables?

Q86. What are macro-nutrients?

Q87. What are macro-nutrients?

### **3 MARKS QUESTIONS**

Q88. Why are manure and fertilizers used in fields?

Q89. Differentiate between parenchyma, collenchyma and sclerenchyma on the Basis of their cell wall.

Q90.Make a comparison and write down ways in which plant cells are different from animal cells.

Q91. What would happen to the life of a cell if there was no Golgi apparatus?

Q92.Why should preventive measures and biological control methods be preferred For protecting crops?

Q93. (a) State two important functions of areolar tissue.

(b) Why are skeletal muscles known as striated muscles?

Q94. Explain in brief any three measures to control air pollution.

Q95. Describe water-cycle in nature.

Q96. What are macro-nutrients and why are they called macro-nutrients?

Q97. What is the criterion for classification of organisms as belonging to kingdom monera or protista?

Q98. What are the advantages of composite fish culture?

Q99.What is pasturage and how is it related to honey production?

Q100. Why is the cell called the structural and functional unit of life?

## 5 MARKS QUESTIONS

Q101.a. Why we are normally advised to take bland and nourishing food when we are sick?

b. Differentiate between acute and chronic disease.

Q102. a. What is the difference between 'Broilers and layers' and in their management?

b. Which method is commonly used for improving cattle breed and why?

Q103. How do poriferan animals differ from coelenterate animals?

Q104. a. Who Proposed five kingdom classification of living being.

b. Explain the basis for grouping organisms in to five kingdoms.

c. Give one point of difference between plantae and fungi.

Q105. Discuss the shape of the following cell organelles:

Lysosomes, mitochondria and Golgi apparatus.

Q106. Why are angiosperms so called ? In which structures do the seeds develop ? How are

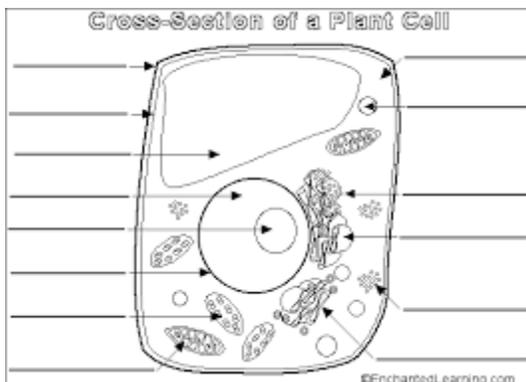
angiosperms different from gymnosperms ?

Q107. (a) Define

(i) Vector                      (ii) Carrier

(b) What are the modes of transmission of AIDS?

Q108.



a). Identify any three parts from the above diagram

b).Write a short note on plant cell.

Q109.(a) What is immunisation ?

(b) Define immunity and vaccination.

(c) Define vaccine.

Q110. What type of diseases can be prevented through vaccination?