BUDHA DAL PUBLIC SCHOOL PATIALA

Final Examination (21 March 2024)

CLASS IX

PAPER- SCIENCE (SET-B)

Time:3 hr. M.M. 80

General Instructions:

i) *This question paper consists of 39 questions in 5 sections.*

ii) *All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.*

iii) *Section A consists of 20 objective type questions carrying 1 mark each.*

iv) *Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.*

v) *Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.*

vi) *Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.*

vii) *Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.*

Section – A

Q1. A solid melts at 52^0C. Its temperature on Kelvin scale is (1)

a) 52 K b) 325 K c) 352 K d) 425 K

Q2. Which of the following will show Tyndall effect? (1)

a) Salt solution b) Sugar solution c) Copper sulphate solution d) Starch solution

Q3. Which formula is not correct? (1)

a) $Al(NO_3)_3$ b) $Al_2(SO_4)_3$ c) Ca_3PO_4 d) $CuSO_4$

Q4. Electronic configuration of Mg^{2+} ion is (1)

a) 2, 8, 2 b) 2, 8 c) 2, 8, 1 d) 2, 8, 8

Q5. Which of the following is not a mixture? (1)

a) Air b) Petrol c) Milk d) Steam

Q6. Which of the following does not have neutrons? (1)

a) H b) He c) Ne d) C

Q7. Which species of bee is commonly known as the little Bee? (1)

a) Apis cerana indica b) Apis dorsata c) Apis florae d) Apis mellifera

Q8. Find out the correct sentence from the following: (1)

i) Hybridisation means crossing between genetically disimilar plants

ii) Cross between two varieties is called as inter specific hybridisation.

iii) Introducting genes of desired character into a plant gives genetically modified crop.

iv) Cross between plants of two species is called as inter varietal hybridisation.

a) i & iii b) ii & iii c) ii & iv d) iii & iv

Q9. Lining of kidney tubules is made up of _____ (1)

a) squamous epithelium b) columnar epithelium
c) cuboidal epithelium d) none of the above

Q10. Fats are stored in human body as (1)

a) Areolar tissue b) Bones c) Adipose tissue d) Cartilage

Q11. Which one of the following organisms has changing shapes? (1)

a) Amoeba b) Paramecium c) Euglena d) Acetabularia

Q12. If a membrane allows passage of solvent freely but selects the passage of specific solute particles, it is called as _____ (1)

a) Impermeable b) Permeable c) Selectively permeable d) none of the above

Q13. Identify the situation in which distance and displacement will be equal. (1)

a) An athlete running on a straight track.
b) A bus moving on a circular road.
c) A pendulum moving to and fro.
d) A planet moving around the sun.

Q14. Identify the correct statement. (1)

(a) During uniform motion of an object along a straight line, the change in velocity of the object for any time interval is negative.
(b) During uniform motion of an object along a straight line, the change in velocity of the object for any time interval is zero.
(c) During non-uniform of an object along a straight line, the change in velocity of the object for any time interval is zero.
(d) During uniform motion of an object along a straight line, the change in velocity of the object for any time interval is more than zero.

Q15. When a body is weighed in a liquid, the loss in its weight depends upon : (1)

a) volume of the body b) mass of the body
c) shape of the body d) centre of gravity of the body

Q16. The frequency of tuning fork that produces waves of time period of 2 seconds during its free vibration is _____ (1)

a) 0.05 Hz b) 0.5 Hz c) 5 Hz d) 50 Hz

For the following questions, two statements are given - one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

a) Both A and R are true and R is the correct explanation of the assertion.
b) Both A and R are true but Reason R is not a correct explanation of Assertion.
c) A is true but R is false.
d) A is false but R is true.

(1)

Q17. **Assertion :** Solids do not diffuse in air.
Reason: The particles of solids are closely packed. (1)

Q18. **Assertion :** Meiosis is called reduction division.
Reason: It halves the chromosome number in the daughter cells. (1)

Q19. **Assertion :** Sound waves are longitudinal waves.
Reason : In sound waves, the particles of the medium oscillate perpendicular to the direction of propagation of the wave.

Q20. **Assertion :** Squamous epithelium consists of thin, flat irregular – shaped cells which fit together closely like tiles in the floor. (1)
Reason : It helps in the movement of mucus, urine, eggs, sperms etc.

Section – B

Q21. a) Write down names of the compounds represented by following formulae. (2)
(i) $CaCl_2$ ii) K_2SO_4
b) Calculate molecular mass of CH_3OH
(Atomic mass of C = 12u, O = 16u, H = 1u)

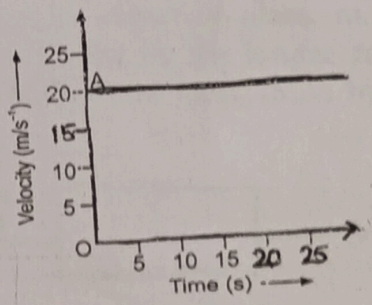
Q22. Define Isobars. Give two examples. (2)

Q23. What will happen if (2)
a) Lateral meristen is cut or damaged.
b) Striated muscles contract rapidly for a long time?

OR

Name the organelles which show the following functions.
a) Digestive bag of the cell.
b) Storage sacs of the cell.

Q24. Carefully observe the graph given alongside and answer the following questions : (2)
a) Is the motion an accelerated motion?
b) Find the distance travelled by the body in 20s.



Q25. A water tanker half filled with water is running with a uniform speed. When the brakes are suddenly applied, the water in its tank moves forward. Why does this happen? (2)

OR

How much momentum will a dumb bell of mass 10kg transfer to the floor if it falls from a height of 80 cm? Take its downward acceleration to be 10 m/s^2.

Q26. If you are provided with some vegetables to cook. You generally add salt into the vegetables during cooking process. After adding salt, vegetables release water. What mechanism is responsible for this? Explain. (2)

Section - C

Q27. Give reasons. (3)

a) We can get the smell of perfume sitting several metres away.
b) Ice at 273K is more effective in cooling than water at the same temperature.
c) Our palm feel cold when we put some acetone on it.

Q28. a) A solution contains 50 ml of ethyl alcohol mixed with 150 ml of water. Calculate concentration of solution.

b) Arrange true solution, colloids and suspension in the
i) Decreasing order of stability
ii) Increasing order of particle size

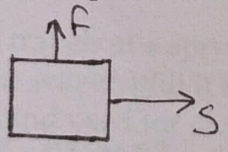
OR

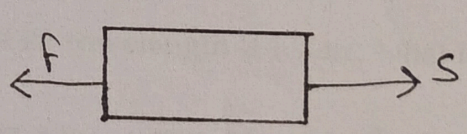
a) Write any two differences between compound & mixture
b) Classify following as physical & chemical change
i) Cutting of wood ii) Rusting of iron

Q29. Differentiate between Cartilage and Bones. (Give 3 points) (3)

Q30. a) What is composite fish culture? (3)
b) Explain with one example.
c) What is the problem associated with it and how it can be solved.

Q31. a) In each of the following force, F is acting on an object of mass, m. The direction of displacement is from west to east shown by the longer arrow. Observe the diagrams carefully and state whether the work done by the force is negative, positive or zero. (3)

i) 

ii) 

b) A crane pulls up a car weighing 500 kg to a vertical height of 4m. Calculate the work done by the crane? Given $g = 10\ m/s^2$.

Q32. An object of mass 3kg is moving with a velocity of 10m/s. A force is applied to it so that in 25s, it attains a velocity of 35 m/s. Calculate the: (3)
a) initial and final momentum of the body.
b) value of force applied.

Q33. a) Define acceleration due to gravity.
b) Prove numerically, that the weight of an object on the moon is $1/6^{th}$ its weight on the Earth. (3)

Section - D

Q34. a) On the basis of Thomson's model of an atom explain how the atom is neutral as a whole? (5)

b) Write the electronic configuration of carbon and sodium and find their valency.

c) If the number of electron in an atom are 8 and number of protons are also 8, then

i) What is the atomic number of atom?

ii) What is the charge on the atom? (2+2+1)

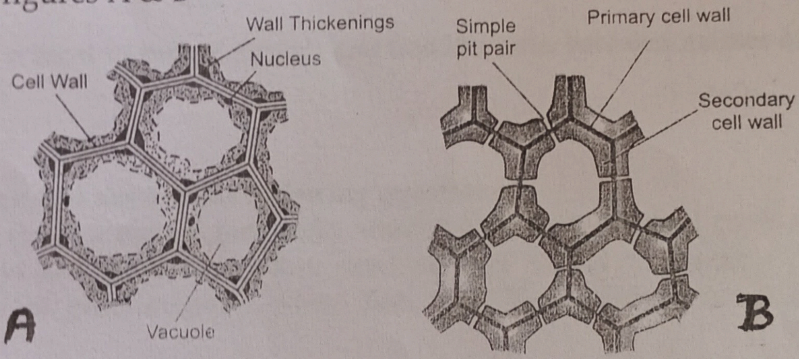
OR

a) What are drawbacks of Rutherfords nuclear model?

b) Write how electrons differ from protons in terms of absolute charge & relative charge.

c) Give one property in which anode rays and cathode rays differ. (2+2+1)

Q35. Given below are two figures A & B (5)



a) Identify figures A and B.

b) Which one of these has deposition of lignin?

c) Which one of these provides both mechanical strength and flexibility?

d) Name the components of phloem.

Q36. (a) A sound wave travels at a speed of 339 m/s. If its wavelength is 1.5cm., what is the frequency of the wave? Will it be audible? (5)

(b) How is ultrasound used for cleaning?

(c) Name two devices using multiple reflections of sound.

OR

A person standing in front of a vertical cliff fires a gun and hears its echo in 4 s. The speed of sound in air is 340 m/s.

a) Which phenomena is responsible for the production of echo?

b) For hearing an echo, is the minimum distance between the source of sound and the reflector same in different medium?

c) What should be the minimum time interval between the original sound and the reflected one to hear a distinct echo?

d) What is reverberation?

e) Calculate the distance at which the person is standing from the cliff.

Section – E

(4)

Q37. **Read the above passage and answer the following questions :**

Carbon dioxide can be prepared by a number of ways such as by burning of coke in air; by the thermal decomposition of lime stone and thirdly by action of dil HCl on washing soda. Hence any compound can be prepared by more than one method / source. It is observed that the compound obtained will contain elements in same proportion.
Based on the following information, answer the following questions:

a) Which law is governed by above observations?

b) Is the composition of the constituent elements same or different in the compounds obtained from different sources?

c) State law of constant proportion.

OR

Name elements present in carbon dioxide and find out ratio between masses of these elements.

(1+2+2)

(4)

Q38. **Read the above passage and answer the following questions :**

Poultry farming is the form of animal husbandry which raises domesticated birds such as chickens, ducks, turkeys and geese to produce meat or eggs for food. Poultry – mostly chickens – are formed in great numbers. More than 60 billion chickens are killed for consumption annually.

1. Define Layers.
2. Poultry breeds which are produce for meat are termed as _____.

   a) Layers b) Broilers c) Indigenous d) Exotic

3. Identify the incorrect Statement/ Statements:

   Statement 1 : Broiler chickens are fed with vitamin – rich supplementary feed for good growth.

   Statement 2 : The level of vitamins A & K is kept high in the poultry feeds.

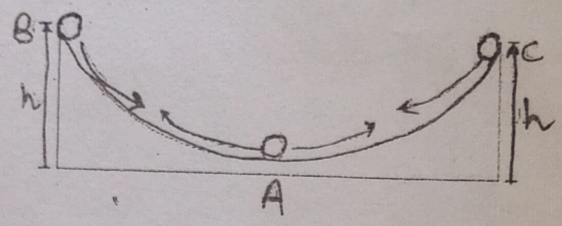
   Statement 3 : The level of vitamins A & K is kept low in the poultry feeds.

   Statement 4 : Improved poultry breeds are developed and farmed to produce layers for eggs and broilers for meat.

   a) Both 1 & 2 b) Only 2 c) Only 3 d) None of the above

4. Enlist the name of Indian and Exotic breed of poultry.

039. The figure shows a watch glass embedded in clay. A tiny spherical ball is placed at edge B at a height h above the centre A. **(4)**



1. The kinetic energy of the ball, when it reaches point A is
   a) zero b) maximum c) minimum d) cant' say

2. The ball comes to rest because of
   a) Frictional force b) gravitational force
   c) both (a) and (b) d) none of these

3. The energy possessed by the ball at point C is
   a) Potential energy
   b) kinetic energy
   c) both potential and kinetic energy
   d) heat energy

4. What is energy?
   a) The ability to do work
   b) The force applied to an object
   c) The distance traveled by an object
   d) The mass of an object

OR

According to the law of conservation of energy, what happens to energy
a) it can be created
b) it can be destroyed
c) it can be transformed from one from to another
d) it remains constant