Class9 Science Sample Question Paper 2017-18 -1

Time allowed: 03 Hours Science Class – IX Maximum Marks: 80

Instruction:

(i) Question numbers 1 and 2 in Section-A are one mark question. They are to be answered in one word or in one sentence.

(ii) Question numbers 3 to 5 in Section- A are two marks questions. These are to be answered in 30 words each.

(iii) Question numbers 6 to 15 in Section-A are three marks questions. These are to be answered in about 50 words each.

(iv) Question numbers 16 to 21 in Section-A are 5 marks questions. These are to be answered in 70 words each.

(v) Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question. These are to be answered in brief

(vi) There is an internal choice in two questions of three marks each and one question of five marks.

Section-A

Question numbers 1 and 2 in Section-A are one mark question

1. Pick the odd one out from: Golgi apparatus, Endoplasmic Reticulum (E.R), Cytoplasm, Lysosomes. Give suitable reason for your selection.

Ans. Cytoplasm is odd one from the above because it is the fluid present inside the cell where as other all are the cell organelles

2. What is the cell wall of fungi made up of?

Ans.chitin

Question numbers 3 to 5 in Section- A are two marks questions

3. Name the tissue present in the hard covering of seeds. Which chemical is responsible for making this tissue hard?

Ans. Sclerenchyma is the tissue present in hard covering of seed. Lignin is responsible for making tissue hard.

4. “All the object in the universe attract each other" (a) What is this force of attraction called as?

(b) Name any two factors on which this force of attraction depends.

Ans. (a) Gravitational Force (b) Masses of objects and distance between them

5. The speed of sound in water is 1500 m/s. How far away from an under-sea rock should a diver be so that he can hear his own echo?

Ans. Distance = sxt/2 =1500×0.1/2 =75m

Question numbers 6 to 15 in Section-A are three marks questions

6.(a) Both helium and beryllium have two electrons in the valence shells. Helium is a noble gas whereas Beryllium is a metal, justify.

(b) Hydrogen exists in three isotopic forms. Why are the isotopes of hydrogen chemically alike?

Ans. (a) Helium has only two electrons. Maximum capacity of k shell is 2. So It is a noble gas,

But beryllium has 4 electrons. The maximum capacity of the L shell is 8. But it has only two electrons in it. So it's valency is 2

(b) This is because all isotopes of hydrogen have same no of election.

7. Differentiate between 'Healthy and Disease Free' in terms of (i) nature of body functioning (ii) level of considerations.

Ans. (I) Nature of body functioning- healthy person can do his work much more better than disease free person because healthy person is physically fit but disease free have no disease but it is not essential disease free is always fit

(ii) level of consideration: Heathy person is a disease free but a disease free person may not be healthy

8. Give any two differences between angiosperms and gymnosperms giving one example of each.

Ans	Gymnosperms	Angiosperms
	Gymnosperms are non-flowering plants.	Angiosperms are flowering plants.
	Gymnosperms bear naked seeds i.e., they are not enclosed inside the fruit.	Seeds Of angiosperm are enclosed inside the fruit.
	Cyas,pinus	Rose,wheat

9. A ship sends out ultrasound, produced by transmitter that returns from the sea-bed and detected after 3 sec. If the speed of ultrasound through sea water is 1530 m/s., find the distance of the sea-bed from the ship.

Ans. The distance of the sea-bed from the ship = 1530×3/2 =2295m=2km295m

10. State Archimede's Principle. Explain its two applications.

Ans. Archimedes principle states that the upward buoyant force that is exerted on a body immersed in a fluid whether fully or partially submerged is equal to the weight of the fluid that the body displaces.

Up thrust = Buoyant force = Weight of the fluid displaced.

Applications(i) Floating of aquatic animals(ii) Construction of ships, steamers and boats

11. Give two feature of following :(i) tissue that store fat (ii) tissue that stimulate impulses (iii) tissue that control contraction and relaxation of heart

Ans. (i) the tissue is adipose tissue.

features. a. these are found below the skin and between internal organs .b. cells of this tissues are filled with fat globules.

(ii) the tissues is nervous tissues.

a. it stimulate impulses. b. Found in brain , spinal cord , and nerves.

(iii) Cardiac muscular tissue - It is an involuntary, striated muscle b.it is found in the walls of the heart.

Or, Answer the following questions on the basis of the given information:

(a) In a four-chambered heart, no mixing of oxygenated and deoxygenated blood takes place. Name two groups of animals in the body of which mixed blood flows.

(b) Cnidarians have no body cavity, Annelids and the groups that follow have true coelom. Which other phylum has no coelom? Which one has pseudocoelom?

(c) Phylum protochordata has-a new feature notochord. Up to which phylum this structure is not present?

(d) In organisms the level of organization ranges from cell-->tissue->organ-> organ system.

State the groups which have only cellular and tissue level respectively?

(e) Out of the three germ layers: endoderm. , mesoderm and ectoderm, which develops last. Name two groups of animals that have this germ layer too.

Ans. (a) Amphibians and reptiles (b) Porifera has no coelom, Nematoda has pseudocoelom (c) Porifera to Echinodermata

(d) Porifera have only cellular level of organization and coelenterate have tissue level of organization.

(e) Mesoderm, Platyhelminthes and Nematode

12. Which will have greater inertia of A,B and C filled with same volume of mercury , water and air . Give reason to support your answer.

Ans. A, mercury has greater inertia as it is metal and has greater density

13. A particle weight 120N on the surface of the earth. At what height above the surface will its weight be 30N? Radius of the earth= 6400 Km.

Ans. g = GM / R2 ----------(i)

If the body is taken to a height h above the earths surface,

g = GM / (R + h)2 ----------(ii)

Dividing eq. (ii) by eq. (i), we have

g / g = R2 / (R + h)2 = > 1/4 = R2 / (R + h)2

Taking square root of both sides,

1/2 = R / R + h =>R + h = 2R=> h = R => h = 6400 km

14. Why copper Sulphate solution in water does not show Tyndall effect but mixture of water and milk shows?

OR, You are provided with a mixture of mustard oil and water. Name the technique to separate it and write the principle involved. Draw diagram of the technique used.

Ans: Copper sulphate solution in water does not show tyndall effect as it is a type of true solution and the particles of solution are very small to be able to make the light path visible whereas a milk is a colloid whose particle size is big enough to scatter a beam of light and make the path visible.

Or, Ans. A mixture of mustard oil and water can be separated using a separating funnel.

15. Raghu had a poor yield due to failure of the crop. His father Rajan suggested that he should grow two or more crops simultaneously in his field as this would reduce risk of loss. He suggested two crops that can be grown together.

(i) Write the name of the cropping pattern which his father suggested.

(ii) Write the names of the examples of crops given by his father.

(iii) Mention any two values that are worth appreciation in his father's behaviour (VBQ)

Ans: (i)mixed cropping. (ii)wheat+gram (iii)helpfulness and kindness

Question numbers 16 to 21 in Section- A are 5 marks questions

16.(a) What are vectors ?

(b) In many species of mosquitoes the males do not feed on human blood, but females do. State why?

(c) What precautions could you take in your locality or society to reduce the incidences of infectious diseases?

Ans: (a) A vector is an organism that does not cause disease itself but spreads infection by caring pathogens from one host to another. Species of mosquito, for example, serve as vectors for the deadly disease Malaria

(b) This is because female mosquitoes require some proteins for nourishing their babies which is present in our blood.

(c) (i)clean surroundings (ii)better sanitation facilities (iii) spreading awareness among people

17. (a) Does the sound of an exploded cracker in air travel faster, than the sound produced by humming bee ? State reason.

(b) List the three characteristics of a sound wave and state the factors on which these depends.

(c) State the SI units of wavelength and frequency.

Ans. (a) The sound of exploded cracker and humming bee travel at a same speed because speed of the sound does not depend on pitch, loudness

(b) Loudness - Amplitude of sound ; Pitch – frequency ; Timber: Both Amplitude and Pitch of sound

18. Define kinetic energy. Write an expression for kinetic energy and the SI unit of kinetic energy. Two cars are moving with velocities 36 km/h and 54 km/h on a highway. Find the ratio of their kinetic energies if mass of the cars is 400 kg and 600 kg respectively.

Ans. kinetic energy is the energy possessed by a moving object. Expression = ½ mv S I unit = joules

V_1 =36 km/hr = $10m/s^2$ v_2 = 54 km/hr = $15m/s^2$ m_1 =400 kg m_2 = 600kg

$$\frac{KE_1}{KE_2} = \frac{\frac{1}{2} \times 400 \times 10 \times 10}{\frac{1}{2} \times 600 \times 15 \times \times 15} = 8:27$$

19. (a) Prove that if the earth attracts two bodies placed at the same distance from the centre of earth with equal force then their masses will be the same.

(b) Mathematically express the acceleration due to gravity in terms of mass of the earth and radius of earth.

(c) Why is 'G' called a universal constant?

Ans. (a) Let mass of first body be m_1 Let mass of second body be m_2

Force on 1st body = Force on 2nd body => $\frac{GMmi}{R^2} = \frac{GMm2}{R^2}$ => $m_1 = m_2$

b) $g = GM/R^2$ (c) Its value is constant in universe

20 .The velocity-time graph of an object is as shown below.

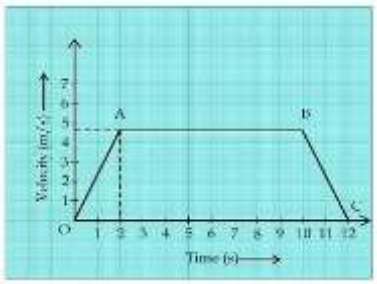
(a) Identify the kind of motion of the object represented by lines OA and BC.

(b) With what velocity the object is moving at t = 8 seconds

(c) Calculate the acceleration of the object in the following cases :

(i) Between the third and tenth second.

(ii) During the last two seconds.



Ans. (a) motion of the object represented by lines OA and BC are accelerated and retarded respectively.

(b) Acceleration of the lift during first 2 seconds = 4.6 / 2 = 2.3 m/s2

(c) Acceleration between third and tenth second = 0

(d) Acceleration during last 2 seconds = $\frac{0-4.6}{2}$ = - 2.3 m/s^2

21. Explain the desirable traits obtained after cross-breeding an indigenous and an exotic breed of poultry birds

Ans: The desirable traits obtained after cross breeding indigenous and exotic breeds of poultry birds are as follows:

(i) Increase in number of chicks. (ii) Improvement in quality of chicks.

(iii) Dwarf broiler parent for commercial chick production. The food and space requirement of dwarf birds is less. Hence, it is profitable.

(iv) Summer adaptation capacity/ tolerance to high temperature. (v) Low maintenance requirements.

(vi) Reduction in the size of the egg-laying bird with ability to utilize more fibrous cheaper diets formulated using agricultural by-products.

Section-B : Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question

22. Write two characters which help in identifying gymnosperms

Ans: Gymnosperms are non-flowering plants. Gymnosperms bear naked seeds i.e., they are not enclosed inside the fruit. Eg. Cyas, pinus

23. Write the special feature of root and leaves of mustered plants

Ans: Mustard is dicotyledonous . It has a prominent tap root ,Leaves have reticulate venation with network of veins

24. While performing the experiment to establish the relation between loss of weight of solid when immersed in water, to the weight of water displaced, it is seen that loss in weight of solid in salty water is more than tap water. State reason for this observation.

Ans. It is because density of salt solution is more than water and more the volume of solid submerged, more is the liquid displaced and hence more is the loss of weight.

OR, Komal heated some crystals of copper sulphate in a boiling tube and noted the water droplet along the walls of the tube and the colour of crystals changed from blue to white. Give reason?

Ans. Before heating it was blue but after heating it will turned Colourless (white).

This is because, CuSO4 have crystal of water ($CuSO_4.5H_2O$). When the blue crystals are heated the water of crystallization is lost and what remains is anhydrous copper sulphide (CuSO4).

As this is a reversible reaction, it's color can be restored by adding water to it

25. When egg albumin is added to water the clear solution became turbid. How would you test to conform that it is a colloidal solution?

Ans.Filter the contents of test tubes. No residue left on the filter paper but filtrate obtained is translucent. Since, colloid cannot be separated by filtration it is colloid].

26. While determining the melting point of ice teacher instructed that the bulb of the mercury thermometer must remain in the middle of the ice and continuous stirring with glass rod must be done. Why do you think these precautions are necessary?

Ans.To keep a uniform temperature throughout]

27. In an experiment to determine the loss of weight of an object when immersed in a liquid, State the factors on which the force acting on an object depends?

Ans./ Buoyancy Force = pvg

So, The force acting on an object when immersed in a liquid depends 0n are density of water and Volume of object,