

APEEJAY SCHOOL, SHEIKH SARAI
FIRST TERM EXAMINATION, 2019-20

SS-47

CLASS-IX [SET-II]

SCIENCE

Time allowed : 3 Hrs.

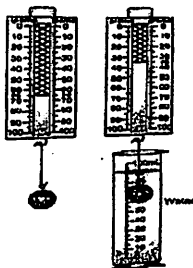
M.M. : 80

General Instructions :

- (i) *The question paper comprises of three section : A, B and C.*
- (ii) *All questions are compulsory. However, an internal choice is provided in 6 questions. Only one option in such question is to be attempted.*
- (iii) *Question number 1 to 20 in Section A are 1 mark questions.*
- (iv) *Question number 21 to 30 in Section B are 3 marks questions.*
- (v) *Question numbers 31 to 36 in Section C are 5-marks questions.*

(SECTION : A)

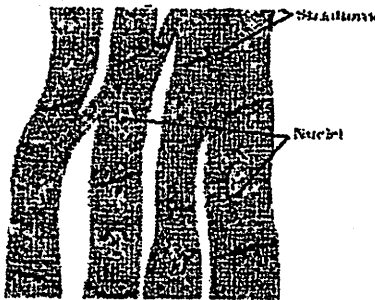
1. A student notes down the observations in the spring balances and the measuring cylinder as shown in fig. (1)



- From the given observations, the loss of weight of the solid in water is :
- (a) 3N
 - (b) 0.3N
 - (c) 30N
 - (d) 300N
2. A solid has density 0.8 g/cm^3 , if its mass is 800 g, then its volume in m^3 is : (1)
- (a) 0.001 m^3
 - (b) 0.0001 m^3
 - (c) 0.01 m^3
 - (d) 0.1 m^3
3. A man is standing on a boat in still water. If he walks towards the shore, the boat will : (1)
- (a) move away from the shore
 - (b) move towards the shore
 - (c) sink in river water
 - (d) remain stationary

P.T.O.

4. Area under v-t graph represent a quantity which has units : (1)
 (a) m^3 (b) m^2
 (c) m^1 (d) m^0
5. Why is glycerine put on the material to be mounted before putting the cover slip ? (1)
 (a) To increase the beauty of slide
 (b) To avoid drying of material
 (c) To float the material
 (d) To increase clarity of material
6. In which tissue do you find light and dark bands : (1)
 (a) Striated muscles (b) Nervous tissue
 (c) Parenchyma (d) Sclerenchyma
7. Which stain is used for making onion peel temporary mount ? (1)
 (a) Methylene blue (b) Safranin
 (c) Acetocarmine (d) Congo red
8. Name the muscle fibre shown in the above figure : (1)



- (a) Cardiac muscles (b) Nervous tissue
 (c) Striated muscles (d) Unstriated muscle
9. A sample contains two substances and has uniform properties. The sample is : (1)
 (a) A compound (b) A heterogeneous mixture
 (c) An element (d) A homogeneous mixture
10. The liquid which has the highest rate of evaporation is : (1)
 (a) Glucose solution (b) Nail-polish remover
 (c) Water (d) Alcohol
11. Filtration can be used to separate : (1)

(ii) What will be the acceleration due to gravity on the surface of the earth if mass of the Earth is halved and radius is doubled ?

32. (a) Derive the relation : $F = ma$

(b) Write the S.I. unit of force.

(c) A force F is required to produce an acceleration 'a' in a body of mass 'm'. What force is required to be applied on the same body to double the initial acceleration ?

OR

(i) Two balls A and B of masses 'm' and '2m' are in motion with velocities '2v' and '3v' respectively. Compare :

(a) their inertia

(b) their momentum

(c) the force needed to stop them in the same time.

(ii) Why does a man bend his knees when he lands after a jump ?

33. (a) Draw a well labelled diagram of collenchyma. (2+3=5)

(b) What will happen if :

(i) Apical meristem is damaged or cut ?

(ii) Lymph is not returned to blood ?

(iii) Blood platelets are removed from blood ?

34. (a) (i) Make a well labelled diagram of plant cell. (3+2=5)

(ii) Why does the skin of your finger shrink when you wash clothes for longer time ?

OR

(b) (i) Make a well labelled diagram of animal cell.

(ii) If cells of onion peel is kept in hypotonic solution what will happen to it ? Explain the reason for your answer.

35. A group of students took an old shoe box and covered it with a black paper from all sides. They fixed a source of light (a torch) at one end of the box by making a hole in it and made another hole on the other side to view the light. They placed a milk sample contained in a beaker/tumbler in the box as shown in the figure. They were amazed to see that milk taken in the tumbler was illuminated. They tried the same activity by taking a salt solution but found that light simply passed through it. (5)

(a) Explain why the milk sample was illuminated. Name the phenomenon involved.

(b) Same results were not observed with a salt solution. Explain.

(c) Can you suggest two more solutions which would show the same effect as shown by the milk solution ?

36. (a) You are provided with a mixture of NaCl (sodium chloride) and ammonium chloride. Describe an activity to separate them with the help of a well labelled diagram.

OR

- (b) Give reason for the following : (5)
- (i) A gas cylinder cannot be half filled.
 - (ii) The molecules of water have more energy as compared to molecules of ice at same temperature.
 - (iii) Solid carbon dioxide (dry ice) is stored under high pressure.
 - (iv) On a hot sunny day people sprinkle water on the roof or open ground.
 - (v) The rate of diffusion of liquids is higher than that of solids.



Roll No.	
Name	
Class & Section	

APEEJAY COMMON ANNUAL EXAMINATION, 2019-20

SCIENCE

Time Allowed : 3.00 Hrs.

Class – IX

Maximum Marks : 80

General Instructions :

- 1. The question paper comprises three sections — A , B and C. Attempt all the sections.*
- 2. All questions are compulsory.*
- 3. Internal choice is given in each section.*
- 4. All questions in section A are one- mark questions comprising MCQ, VSA type and assertion-reason type questions. They are to be answered in one word or in one sentence.*
- 5. All questions in Section B are three mark, short answer type questions. These are to be answered in about 50 — 60 words each.*
- 6. All questions in section C are five mark, long answer type questions. These are to be answered in about 80 — 90 words each.*
- 7. This question paper consists of a total of 30 questions.*

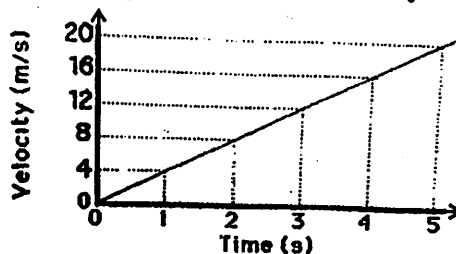
Section-A

1. Why do we see water droplets on the outer surface of a glass containing ice cold water? 1
2. A gas completely fills the vessel in which it is kept. Explain why?

OR

What happens when acetone is poured on the palm?

3. The motion of a body of mass 5 kg is shown in the velocity-time graph.



Find from the graph :

- (i) The acceleration.
- (ii) The force acting on the body.
- (iii) The change in momentum of the body in 2 s after the start.
- (iv) The distance covered by the body in 4 s after the start.

(1×4=4)

4. Question numbers 4(a) - 4(d) are based on the diagrams given below. Study the diagrams and answer the questions that follow. (1×4=4)



A



B



C



D

- (a) One specific feature related to adaptation of animal A is

- (i) The presence of a notochord.
- (ii) Forelimbs are modified for flight
- (iii) A post anal tail
- (iv) The presence of gill slits.

- (b) The features found in organisms (B) is /are

- (i) Umbrella shaped part called pileus
- (ii) A saprophytic mode of nutrition
- (iii) A mycelial body
- (iv) All of the above .

- (c) The plant C belongs to "cryptogamae" because they have
- (i) Cotyledons
 - (ii) Well differentiated reproductive organs.
 - (iii) Hidden reproductive organs
 - (iv) Seeds enclosed in fruits
- (d) The scientific name of organism D is
- (i) *Columbia livia*
 - (ii) *Periplaneta americana*
 - (iii) *Pheretima posthumus*
 - (iv) *Passer domesticus*

5. Rocket works on the principle of

- (a) Newton's third law
- (b) Newton's second law
- (c) Newton's fourth law
- (d) Newton's first law

OR

"Action and reaction are equal and opposite but even then they do not cancel each other" the above statement is

- (a) partially false.
- (b) false
- (c) partially true
- (d) true

6. To compare the pressure exerted by the solid iron cuboid, a student took two cuboids having the same dimension and same nature of material. After performing the experiment with both the cuboids, she found

- (a) $p_1 = 2p_2$
- (b) $p_2 = 3p_1$
- (c) $p_1 = p_2$
- (d) $p_2 = 2p_1$

7. When we change feeble sound to loud sound, We increase its

1

- (a) frequency
- (b) amplitude
- (c) velocity
- (d) wavelength

8. Farming without the use of chemicals like fertilizers, herbicides and pesticides is known as

1

- (a) Terrace farming
- (b) Crop rotation
- (c) Jhum cultivation
- (d) Organic farming

OR

Cross between plants of different varieties is called

- (a) Intergeneric hybridisation (b) Intervarietal hybridisation
(c) Somatic hybridisation (d) Interspecific hybridisation

9. Which one of the following is an example of a colloid?

- (a) Fog (b) Salt Solution
(c) Air (d) Mixture of oil and water

10. Electronic Configuration of the element with atomic number 14 is

- (a) 2,8,4 (b) 2,4,8
(c) 4,2,8 (d) 4,8,2

11. Following is the example of Triatomic molecule :

- (a) Hydrochloric Acid (b) Carbon dioxide
(c) Ammonia (d) Sulphuric Acid

12. The atomic number of four elements A, B, C and D are 9, 10, 8 and 13 respectively. Which of them will form a cation?

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

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

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

13. **Assertion :** Solubility of a substance depends on the temperature

Reason : Solubility of sodium chloride decreases with increase in temperature.

14. **Assertion :** Motion of satellites around their planets is considered as accelerated motion.

Reason : During their motion, the speed remains constant, while the direction of motion changes continuously.

Section-B

15. How does the fractional distillation differ from simple distillation process? Draw a labelled diagram of the apparatus used for fractional distillation. 3
16. (i) Calculate the molecular mass of C_2H_5OH . (Atomic Mass of C = 12u, H = 1u, O = 16u)
- (ii) How many moles are present in 4g of Sodium Hydroxide ? (Atomic Mass of Na = 23u, H = 1u, O = 16u)
- (iii) Write down the names of compounds represented by following formulae
- (a) $Al_2(SO_4)_3$
- (b) $CaCl_2$ 3
17. Draw Oxygen Cycle in nature 3

OR

Draw Carbon Cycle in nature

18. List any three human activities which would lead to an increase in the carbon dioxide content in air. 3
19. (a) What will happen if cork is not formed in older stems and root? 3
- (b) Name the following :-
- (i) Tissue where fat is stored
- (ii) The tissue which lines blood vessels
- (iii) Tissue found in the respiratory tract.
- (iv) Tissue found in the salivary glands.

OR

- (a) State two points of difference between parenchyma and sclerenchyma
- (b) Identify the tissue /cell in each case
- (i) Which has widely spaced cells and where matrix is made of proteins and sugars.
- (ii) Which supports internal organs and help in repair of tissues
- (iii) Which has spindle shaped cells and is uninucleate
- (iv) Cells specialised in receiving stimuli and transmitting them.

20. Name one indigenous and one exotic variety of honey bees. Why is exotic variety of honey bee commonly used for commercial honey production? 3

21. (a) Flat worms are 'triploblastic' and 'acoelomate'. What do these terms mean? 3

(b) Pick the odd one out giving suitable reason.

Cladophora Marsilea, Ulothrix, Spirogyra

22. A body weighs 900 N on the surface of earth. How much will it weigh on the surface of mars whose mass is $1/9$ and the radius is $1/2$ of that of the earth. 3

OR

(a) State Archimedes principle.

(b) The volume of a 500 g sealed packet is 350 cm^3 . Will the packet float or sink in water if the density of water is 1 g/cc ? What will be the mass of the water displaced by this packet?

23. If an electric iron of 1200 W is used for 30 minutes every day, find the electric energy consumed (in units) in the month of April. 3

24. (a) Why are sound waves called mechanical waves?

(b) How cracks in metal block can be detected? 1+2=3

Section-C

25. (a) Give reasons for the following :

(i) Evaporation causes cooling.

(ii) Rate of evaporation of an aqueous solution decrease with increase in humidity.

(iii) Sugar crystals dissolve faster in hot water than cold water.

(b) Substance 'A' has highest compressibility and can be easily liquefied. It can take the shape of any container. Predict the state of the substance. Enlist any two properties of this state of matter other than those mentioned above. 5

26. (i) Explain valency by taking example of Chlorine and Sodium. 5

(ii) If Bromine atom is available in the form of say, two isotopes ^{79}Br (49.7%) and ^{81}Br (50.3%). Calculate the average atomic mass of bromine atom.

(iii) Which subatomic particle is absent in an ordinary hydrogen atom?

OR

29. (a) Derive the second equation of motion graphically?
- (b) A stone is thrown in a vertically upward direction with a velocity of 5 m/s. If the acceleration of the stone during its motion is 10 m/s^2 in the downward direction, what will be the height attained by the stone and how much time will it take to reach there?

3+2=5

OR

- (a) State Newton's second law of motion and derive its mathematical expression.
- (b) From a rifle of mass 4 kg, a bullet of mass 50 g is fired with an initial velocity of 35 m/s. Calculate the initial recoil velocity of the rifle.
30. (i) State Newton's law of gravitation. 5
- (ii) Derive how does the value of gravitational force F between two objects change when
- (a) distance between them is reduced to half and
- (b) mass of an object is increased four times.
- (iii) A stone is dropped from a height of 100 m on earth. At the same time, another stone is thrown vertically upwards from a ground with a velocity of 25 m/s. At what height from the ground will the stone meet?