

25 35 100
3 90

200
5

8.1
1600
241
1.5

908.9

9 35

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NAPS, Sokel-
SUMMATIVE ASSESSMENT - I, 2016-17

SCIENCE
Class - IX

Time Allowed : 3 hours

Maximum Marks : 90

General Instructions :

1. The question paper comprises of two Sections, A and B. You are to attempt both the sections.
2. All questions are compulsory
3. All questions of Section-A and all questions of Section-B are to be attempted separately.
4. Question numbers 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence
5. Question numbers 4 to 6 in Sections-A are two marks questions. These are to be answered in about 30 words each.
6. Question numbers 7 to 18 in Section-A are three marks questions. These are to be answered in about 50 words each
7. Question numbers 19 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.
8. Question numbers 25 to 33 in Section-B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.
9. Question numbers 34 to 36 in Section-B are questions based on practical skills. Each question is of twomarks.

SECTION-A

- 1 ✓ Name the phenomenon that results in the shrinkage of human red blood cells when they are placed in hypertonic salt / sugar solution. 1
- 2 ✓ What is the direction of velocity of an object moving along a circular path? 1
- 3 ✓ If the mass of a body and the force acting on it are both doubled, what happens to its acceleration? 1
- 4 How will you separate a mixture of two miscible liquids Kerosene and petrol? The difference in their boiling points is less than 25 K. Explain. 2
- 5 ✓ Differentiate between simple tissue and complex tissues in plants. 2
- 6 Give reason-stone falls towards the earth but earth do not rise towards the stone. 2
- 7 ✓ How many litres of 15% (mass/volume) sugar solution would it take to get 75g of sugar? 3
- 8 Explain that boiling is a bulk phenomenon but evaporation is a surface phenomenon. 3
- 9 ✓ (a) Convert the following temperatures to celsius scale 3
(i) 400 K (ii) 373 K

- (b) Write the following temperature in Kelvin Scale.
- Melting point of ice
 - Normal human body temperature
- 10 Can a single cell live independently on its own? Explain by giving example. 3
- 11 Name the connective tissue : 3
- Which has hard matrix of calcium and phosphorus compounds
 - Which connects muscles to bones
 - Which fluid matrix contains proteins, salts and hormones.
 - Which stores fats below the skin and between internal organs.
 - Which is present in the nose, ear, trachea and larynx.
 - Which connect two bones with each other.
- 12 A gun of mass 3 kg fires a bullet of mass 30 g. The bullet takes 0.003 s to move through the barrel of the gun and acquires a velocity of 100 m/s. Calculate : 3
- The velocity with which the gun recoils
 - The force exerted on gunman due to recoil of the gun.
- 13 (i) A force of 20 N acts upon a body, whose weight is 9.8 N. What is the mass of the body and how much is its acceleration. ($g = 9.8 \text{ ms}^{-2}$) 3
- (ii) If weight of a body is 50 N. What is its mass ? ($g = 9.8 \text{ ms}^{-2}$)
- 14 If a bus is moving from B to A and due to application of brakes it slows down, and then comes to a stop. 3



- (a) What is the direction of its acceleration? Is the acceleration positive or negative?
- (b) Define uniform acceleration and uniform velocity.
- 15 The following table shows the position of three persons between 8 : 00 am to 8 : 20 am. with respect to initial position. 3

Time	Position (in km)		
	Person A	Person B	Person C
8 : 00 am	0	0	0
8 : 05 am	4	5	10
8 : 10 am	13	10	19
8 : 15 am	20	15	24
8 : 20 am	25	20	27

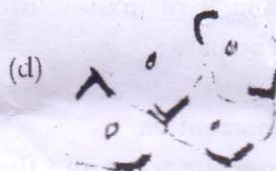
- Who is moving with constant speed?
- Who has travelled maximum distance between 8 : 00 am to 8 : 05 am?
- Calculate the average speed of person 'A' in km/h?

- 16 Two objects, A and B are of mass M and $2M$ with velocity V , $V/2$ respectively. Which one will have greater inertia and greater momentum? Give reason for your answer. 3
- 17 Afzal was taking care of his poultry farm for years now. His son Abdul visited Central Poultry Breeding Farm to seek advice on certain improved breeds. When he introduced HH260 cross breed, the egg and meat production increased. 3
- (i) List four desirable traits for which variety improvement or cross breeding is done.
(ii) Why did Abdul obtain information on improved breeds?
- 18 (a) Name the term used for unwanted plants in cultivated field. 3
(b) Why do farmers remove them from crop field?
(c) Mention one measure by which these can be killed.
- 19 List six physical properties of metals. Name two metals. Name a metal which is liquid at room temperature. 5
- 20 (a) Illustrate an activity to demonstrate that particles of matter have spaces between them. 5
(b) Explain why a diver is able to cut through water in a swimming pool.
- 21 Write four characteristic features of Parenchymatic tissues. How would you classify this tissue based upon its specialised functions? What are these functions? 5
- 22 (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. 5
(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?
- 23 (a) Define momentum. Derive its SI unit. How is force expressed in terms of momentum? 5
(b) Two balls A and B of masses ' m ' and ' $2m$ ' are in motion with velocities $2v$ and $1v$ respectively. Compare :
(i) their inertia
(ii) their momentum
- 24 Describe briefly about the traits and their utilities important for improvement of varieties of a cereal crop. 5

SECTION - B

- 25 We need to use separate dropper for each chemical reagent because : 1
- (a) there is separate dropper available for each chemical reagent
(b) using the same dropper may contaminate the chemicals reagent
(c) all the reagent bottles come with separate droppers
(d) it is not essential, one dropper can be used for different chemical reagents.
- 26 The food stuff whose extract will not change to blue-black with iodine solution is : 1
- (a) Potato (b) Rice
(c) Apple juice (d) Chana dal
- 27 When iron filings and powdered sulphur are mixed together in a china dish, which statement is not correct? 1
- (a) A heterogeneous mixture is formed.
(b) The constituents present can be seen easily.

- (c) The constituents can be separated by a magnet.
- (d) A homogeneous mixture is formed.
- 28 In a china dish, 7 g iron filings and 4 g sulphur powder are mixed properly. Suggest a method to separate the individual constituents from its mixture. 1
- (a) Physical method
- (b) Chemical method
- (c) Both Physical and Chemical method
- (d) Components cannot be separated
- 29 We observe a brown coating on the iron nail when it is dipped in the copper sulphate solution. It is : 1
- (a) Iron gets rusted
- (b) Copper is deposited on the iron
- (c) Iron is corroded by the effect of copper sulphate
- (d) All of the above.
- 30 On observing the temporary mount of human cheek cells under a microscope it was observed that their shape was : 1
- (a) Spherical
- (b) Long and almost rectangular
- (c) Irregular and flat
- (d) Square
- 31 Four students observed parenchyma tissue and drew following diagrams. Which one is correct ? 1



- 32 The correct order of methods applied to separate the components of a mixture of common salt, sand and ammonium chloride is : 1
- (a) Dissolving in water, evaporation and sublimation
- (b) Dissolving in water, filtration, evaporation and sublimation.
- (c) Sublimation, dissolving in water, filtration and evaporation.
- (d) Moving a magnet, dissolving in water and sublimation
- 33 Three students A, B and C were given a rectangular wooden block and were asked to measure minimum force required to make it just move on a horizontal surface with the help of spring balance. Each of them separately performed the experiment by placing block on its different face as shown in the figures given below and measured the minimum force as F_1 , F_2 and F_3 respectively. In the end they compared their results. It was observed that : 1