

PRE SUMMATIVE ASSESSMENT - I : 2015 - 2016
SUBJECT : SCIENCE

Max. Marks : 90

SECTION : A

Time : 3 : 00 Hrs.

I. Question numbers 1 to 3 carry one mark each

1. Mention the specific function of the cardiac muscles.
 2. Under what condition will the magnitude of the displacement be equal to the distance travelled by an object?
 3. Write the units of 'g'

II. Question numbers 4 to 6 carry two marks each

- How can we obtain different gases from homogeneous mixture of air? Draw a flow diagram for it.
 - It is the cell number and not the cell size that determines the size of an organism. Comment on this statement using an example.
 - A car of mass 2400 kg moving with a velocity of 20 ms^{-1} is stopped in 10 s on applying brakes. Calculate the negative acceleration and the resultant force.

III. Question numbers 7 to 18 carry three marks each

- 7.** What is evaporation? How the rate of evaporation does depends on the speed of wind?

8. (a) Tyndall effect can be observed when sunlight passes through a canopy of dense forest. Explain it.
(b) Give any two examples of colloids.

9. A rubber band can change its shape on stretching. Will you classify it as solid or not? Justify your answer.

10. Draw a neat and well labelled diagram of the neuron cell.

11. List two similarities and two dissimilarities between a plant cell and an animal cell?

12. Distinguish between speed and velocity.
A bus is moving with a speed of 72 km/h. On applying brakes it comes to rest in 5 s. Find the acceleration and the distance travelled by the bus before coming to rest.

13. A boy on a cliff 19.6 m high drops a stone. One second later, he throws a second stone after the first. They both hit the ground at the same time. With what speed did he throw the second stone?

14. From a station ‘X’ a train starts from rest and attains a speed of 54 km/h in 10 s, then with this uniform speed it moves for 8 minutes and then by applying brakes it stops at station ‘Y’ in 6 s. Find the distance between station ‘X’ and ‘Y’.

15. Mohan along with his schoolmates goes on a camel safari. They travel 3 km north, then 3 km east and then 1 km north again. Draw the path along which they are moving. What distance did they cover? What is their displacement?

16. (i) Why do we see an apple falling towards the earth but do not see the earth move towards the apple?
(ii) Why are tides caused?

17. A farmer wanted to invest some money in fish farming. But he did not know how to start. How can you guide him for a profitable business inspite of limited resources?

- (ii) What are the limitations of fish farming? (iii) How can these limitations be overcome?

18. Name three weed plants and mention their scientific names.

IV. Question numbers 19 to 24 carry five marks each

19. Which separation techniques you will apply for the separation of the following mixtures –

(a) Oil from water	(b) Camphor from sand
(c) Sodium chloride from its solution in water	(d) Metal pieces from engine oil of a car
(e) Cream from milk	



- 20.** (a) Is the inter conversion of states of matter possible? If possible explain with arrow chart.
(b) Explain how ice is converted into water?
- 21.** Define meristematic tissue? What happens to the cells formed by this tissue and what do they form as a result? Name and define the process.
- 22.** Two objects A and B, having mass 100 kg and 75 kg, moving with velocities 40 km/hr and 60 km/hr respectively. Answer the following :
(a) Which will have greater inertia? (b) Which will have greater momentum?
(c) Which will stop first if equal negative acceleration is applied on both?
(d) Which will travel greater distance?
(e) Which will impart greater impulse if collides with a wall?
- 23.** (i) Calculate the force between two objects when :
(a) Mass of one object is doubled (b) Masses of both objects are doubled
(c) Distance between them is doubled (d) Distance between them is halved
(ii) Galileo dropped different objects from the top of the leaning tower of pisa in Italy. What did he want to prove?
- 24.** (a) Mention and explain two fresh initiatives for increasing the water available for agriculture.
(b) Explain the following terms :
(i) Compost (ii) Green manure (iii) organic farming

SECTION : B

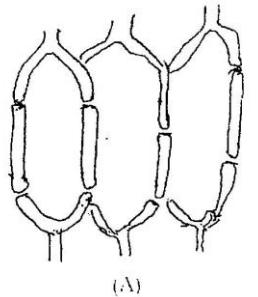
V. Question numbers 25 to 33 carry one mark each

- 25.** A student wants to test the presence of adulterant in food items. He took four test tubes. A, B, C and D. In test tube A, he took potato extract and added iodine solution. In test tube B he took dal water and added conc. hydrochloric acid. In test tube C he took potato and alcohol and in test tube D he took dal and methylene blue. He observed pink colour in test tube :
(a) A (b) B (c) C (d) D
- 26.** Starch is not a stored form of carbohydrates found in :
(a) animals (b) cereals (c) pulses (d) tubers
- 27.** Which of the following experiments results in formation of a compound?
(a) Mixing of iron filing and sulphur powder at 55°C (b) Adding alum to boiling water
(c) On strongly heating a mixture of iron filings and sulphur
(d) Addition of carbon disulphide to a mixture of iron filings and sulphur powder
- 28.** A black mass of Iron sulphide is crushed into powdered form and taken on a watch glass. When a magnet is brought near the powdered black mass of Iron sulphide, then :
(a) Whole compound of Iron sulphide, will be attracted towards magnet
(b) Only Iron will be attracted towards magnet
(c) Only sulphur will be attracted towards magnet (d) Black mass of Iron sulphide will be unaffected
- 29.** A metal M, which is less reactive than copper is placed in copper sulphate solution by a student. He observed that :
(a) blue colour of the solution gets discharged (b) the solution changes colour to green
(c) reddish brown precipitate of copper appears after some time
(d) no change in colour of solution occurs

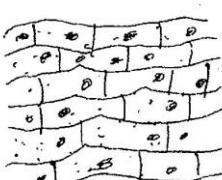
30. The thin peel of onion is placed in a watch glass containing water because :

- | | | | |
|--|--|--------------------|------------------|
| (i) It prevents the peel from folding | (ii) It prevents the entry of air bubbles | | |
| (iii) It prevents the peel from drying | (iv) It helps in better staining of the peel | | |
| (a) (i) and (ii) | (b) (i) and (iii) | (c) (ii) and (iii) | (d) (i) and (iv) |

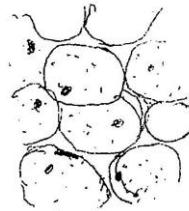
31. Four slides were observed under microscope for spot test as shown below. The correct identification of the four spots is :-



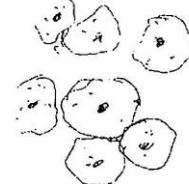
(A)



(B)



(C)



(D)

- | | | | |
|------------------|------------|--------------|--------------|
| (a) Onion peel | Cheek cell | Sclerenchyma | Parenchyma |
| (b) Cheek cell | Parenchyma | Sclerenchyma | Onion peel |
| (c) Parenchyma | Cheek cell | Onion peel | Sclerenchyma |
| (d) Sclerenchyma | Onion peel | Parenchyma | Cheek cell |

32. A mixture of sand and salt is separated from each other by the process :

- | | |
|-----------------------------|---------------------------------|
| (a) filtration, evaporation | (b) condensation, decantation |
| (c) filtration, sublimation | (d) crystallization, filtration |

33. Friction can be increased by :

- | | |
|---|-----------------------|
| (a) By making the contact surface rough | |
| (b) By increasing the weight of one of the sliding bodies | |
| (c) Both a and b | (d) None of the above |

V. Question numbers 34 to 36 carry two mark each

34. Rima took five chalk powder, egg albumin, starch powder and alum powder in four test tubes A, B, C and D respectively. After adding water to all the four test tubes, identify the test tubes as true solution, suspension and colloid.

35. In an experiment to determine the boiling point of water, mention two important precautions to be taken.

36. 5g of raisins were placed in distilled water for 24 hours. The mass of soaked raisins was found to be 7g. Calculate the percentage of water absorbed by raisins.



SHRI SAI ACADEMY
PRE SUMMATIVE ASSESSMENT : 2015 – 2016
SUBJECT : SCIENCE

Max. Marks : 90

SECTION : A

Time : 3 : 00 hr

I. Question numbers 1 to 13 carry one mark each



- 17.** Mention two factors which replenish water back in the environment?

18. The wavelength of the vibrations produced on the surface of water is 2cm, if the wave velocity is 16m/s calculate –

 - the number of waves produced in 1 sec
 - time required to produce one wave

19. Draw a diagram of earthworm and label clitellum on it.

III. Question numbers 20 to 29 carry three marks each

- 20.** What are isotopes? Write 3 isotopes of hydrogen. Why do isotopes show similar chemical properties?

21. Verify by calculating that –

 - 5 moles of CO_2 and 5 moles of H_2O do not have the same mass.
 - 240g of calcium and 240g of magnesium elements have a mole ratio 3 : 5.

22. (a) Write the uses of I – 131, C – 14, CO – 60 and P – 32?

(b) The given figure depicts the atomic structure of an atom of an element ‘X’. The element X

 - Atomic number of X
 - Valency electron
 - Valency

23. An organism ‘A’ has a notochord, a dorsal nerve cord and is triploblastic, coelomate

 - State the phylum of animal ‘A’
 - State the class of ‘A’ if it is warm blooded and give birth to young ones.
 - How many chambers are there in its hearts?

24. Give three differences between monocotyledonous and dicotyledonous plants.

25. Classify the following under fungus / protozoan / viral / bacterial / diseases : influenza, tuberculosis, malaria, skin infections, typhoid, hepatitis.

26. What do you mean by kinetic energy. Derive the formula for kinetic energy.

27. What is the work to be done to increase the velocity of a car from 30 km/hr to 60 km/hr. If the mass of the car is 1500 kg.

28. Describe with the help of a diagram how compression and rarefaction are produced in air near a source of sound.

29. Prepare a speech to be delivered by you in a panchayat meeting to create 3 awareness and telling the people about disadvantages of open toilets.

IV. Question numbers 30 to 36 carry five marks each

- 30.** Define relative density of a substance. Relative density of silver is 10.8. The density of water is 1000kg/m^3 what is the density of silver in SI unit.

31. (a) Which has more no. of atoms?
(i) 10g of N_2 (ii) 10g of NH_3
(b) Calculate the total no. of moles in 0.585g of sodium chloride. (atomic mass of N = 14U, H = 1U, Cl = 35.5U; Na = 23U)

32. (a) Which of the following diseases will cause major ill-effects on general health – elephantiasis, cough and cold, tuberculosis, diarrhea.
(b) What are such diseases called?
(c) Why do such diseases have major ill effects on general health?

33. Write 4 conventions to be followed while writing the scientific names of the organisms. Write the scientific name of tiger.

34. What is upthrust? What are the quantities that can vary upthrust? How does it account for the floating of a body when a partially immersed body is pressed down a little. What will happen to the upthrust?

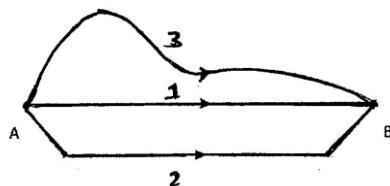
35. (a) What type of energy is possessed by flowing water? Where is it utilized?
(b) a bullet of mass 10g moving with a velocity of 500m/sec strikes a tree and goes out from the other side. With a velocity of 400m/sec. Calculate the work done by the bullet in passing through the tree.

36. How does the gram panchayat ensure proper maintenance of the community sanitary complex (CSC) in the village Mizoram?

SUMMATIVE ASSESSMENT – I : 2015 – 2016
SUBJECT : SCIENCE

Max. Marks : 90**SECTION : A****Time : 3 : 00 hr****I. Question numbers 1 to 3 carry one mark each**

1. Name the tissue present around the vascular bundles.
2. State the relation between the momentum of a body and the force acting on it.
3. A person standing at A goes to B by following any of the three paths 1, 2 or 3. Which path we measure to find the velocity?

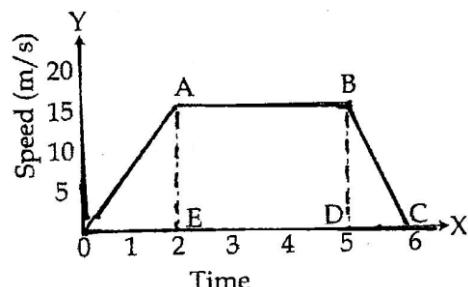
**II. Question numbers 4 to 6 carry two marks each**

4. What is dry ice? How is it prepared?
5. What would happen if lysosomes did not have any enzymes in them? Explain.
6. “All the objects 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.

III. Question numbers 7 to 18 carry three marks each

7. (a) Sodium chloride contains two elements, but it is still a pure substance. Give reason.
 (b) How would you confirm that a colourless liquid given to you is pure water?
8. Why water as steam may cause severe burns but water as ice has cooling effect? Explain.
9. How can we separate a mixture of alcohol and water? Draw a diagram to show the setup of the above separation technique for separating the components of a mixture.
10. What is the fundamental unit of life? Who discovered it? How can they be observed?
11. Name the following and give one characteristic of each.
 - (a) Living tissue that provides mechanical support in plants.
 - (b) Highly specialized cells for being stimulated and then transmitting the stimulus very rapidly within the body of animals.
 - (c) Animal tissue with elongated cells and contractile proteins responsible for movement.
12. Which accident will be more damaging, collision between two trucks moving with a speed of 50km/hr. or collision between two cars moving with a speed of 50 km/hr.? Explain.
13. A ball is thrown upwards from the surface of the moon with a velocity of 19.6m/s
 - (a) How much time will it take to attain the maximum height?
 - (b) How high will it go?
14. Using velocity-time graph of uniformly accelerated motion along a straight line, derive the equation for position-velocity relation.
15. Define SI unit of force.
 A force of 2 N acting on a body changes its velocity uniformly from 2 m/s to 5 m/s in 10 s. Calculate the mass of the body.

- 16.** The speed-time graph of a car is given. The car weighs 1000 kg.
(a) What is the distance travelled by the car in first two seconds?
(b) What is the braking force applied at the end of 5 seconds to bring the car to a stop within one second?



- 17.** In Raghvan's village there was a large pond. But he observed that villagers were not rearing fish in it. He gathered villagers and told them that by having selected species of the fish in the pond. They can get good yield of fish. This practice helped to eradicate malnutrition of the village.

 - State the basis of selection of the different species of fish in this method of fishery.
 - Name this method of intensive fish culture?
 - How did Raghvan help to combat malnutrition in his village?

IV Question numbers 19 to 34 carry five marks each



Out of Rabi and Kharif crops which one needs more water for irrigation? Compare Rabi and Kharif crops on the basis of their harvesting time.

SECTION : B

I. Question numbers 25 to 33 carry one mark each

- 25.** A student wants to test for adulteration in yellow dal. Which reagent he should use to test it :
(a) Iodine solution (b) Safranin (c) Methylene Blue (d) conc hydrochloric acid

26. In a sample of food iodine solution is used to detect the presence of :
(a) Proteins (b) Starch (c) Sugar (d) Fats

- 27.** Sample 'X' is a mixture of iron filings and sulphur. Sample 'Y' is the substance obtained by heating sample 'X' strongly. Which of the following is the correct set of observations?
- (a) 'X' is heterogeneous, 'Y' is homogeneous (b) 'X' is homogeneous, 'Y' is heterogeneous
 (c) 'X' is heterogeneous, 'Y' is heterogeneous (d) 'X' is homogeneous, 'Y' is homogeneous
- 28.** A student by mistake mixed iron filing and sulphur powder. He wanted to separate them from each other. The method you would advise him to use is to dissolve the mixture in :
- (a) boiling water (b) cold water (c) carbon disulphide (d) kerosene
- 29.** On heating crystal of copper sulphate in a test tube it is observed that :
- (a) the substance sublimes (b) brown fumes are evolved
 (c) a grey mass is formed (d) white residue is left behind
- 30.** Which one of the following sets is the correct sequence for preparing a temporary mount of an onion peel?
- (a) (i) take out the onion peel (ii) keep the peel on the slide
 (iii) add a drop of glycerine on it (iv) add a few drops of safranin stain
 (v) cover it with a cover slip
- (b) (i) take out the onion peel (ii) keep the peel in water in a petridish
 (iii) add a few drops of safranin stain and transfer to the slide (v) cover it with a cover slip
 (iv) add a drop of glycerine on it
- (c) (i) take out the onion peel (ii) keep it on a slide and add safranin stain
 (iii) transfer it to water in a pertridish (iv) remove water and add glycerine
 (v) cover it with a cover slip
- (d) (i) take out the onion peel (ii) cover it with a cover slip
 (iii) add water in a petridish to clean it (iv) add a drop of glycerine
 (v) add a few drops of safranin stain
- 31.** When parenchymatous tissue contain chlorophyll they are called :
- (a) aerenchyma (b) chlorenchyma (c) collenchyma (d) sclerenchyma
- 32.** Which of the following substance cannot be separated by the method of sublimation :
- (a) sodium chloride (b) ammonium chloride (c) camphor (d) iodine
- 33.** The spring balance works on the principle of :
- (a) Newton's first law of motion (b) Newton's second law of motion
 (c) Newton's third law of motion (d) All of the above
- II. Question numbers 34 to 36 carry two marks each**
- 34.** A student added fine sand, albumin of egg starch powder and common salt separately to water in four different beakers. He stirred the solutions well. On filtration which one will have solid residue on the filter paper? Which of these filtrate will have cloudy appearance and which filtrate would be transparent?
- 35.** Why should the bulb of the thermometer be kept about 3 – 4 cm above the surface of water while determining the boiling point of water? Explain briefly.
- 36.** If 'x' is the initial mass of the raisins and 'y' is the final mass of raisins after soaking in water, calculate the percentage of water absorbed by raisins. Name the process due to which raisins absorb water.



SRI SATHYA SAI VIDYA VIHAR, INDORE
SUMMATIVE ASSESSMENT - I : 2015 - 2016

Max. Marks : 90

SECTION : A

Time : 3 : 00 hr

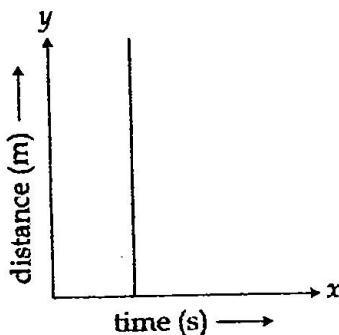
I. Question numbers 1 to 3 carry one mark each

1. Which is the only cell organelle visible in a prokaryotic cell?
 2. While playing football the goal keeper didn't get sufficient time to stop a fast ball shot towards him. Why did he hurt his hand while doing so?
 3. Give an example of a motion in which acceleration is uniform.

II. Question numbers 4 to 6 carry two marks each

III. Question numbers 7 to 18 carry three marks each

IV. Question numbers 19 to 24 carry five marks each



- 24.** (a) Mention and explain two latest initiatives used for increasing the water available for agriculture.
(b) Explain the following terms :
 (i) Compost (ii) Green manure (iii) Organic farming

SECTION : B

I. Question numbers 1 to 33 carry one mark each

- 25.** Metanil yellow is an adulterant mainly found in :
(a) mustard seeds (b) turmeric powder (c) wheat, maize, rice (d) Pulses

26. Moksh wanted to observe starch granules in potato under a microscope. He took a freshly cut slice of a potato and pressed it on a slide. The stain that he should use to observe starch granules clearly is :
(a) safranin (b) acetocarmine (c) methylene blue (d) iodine

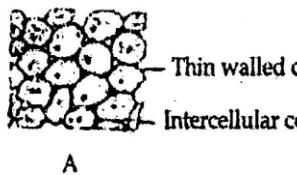
27. Sulphur powder and iron filings were mixed in a china dish. The colour of sulphur powder observed by students is :
(a) black (b) grey (c) yellow (d) reddish

28. Which one of the following is not the property of a mixture?
(a) It is a heterogeneous (b) It is a system of variable composition
(c) It is a system of constant composition (d) Its components can be separated by physical methods

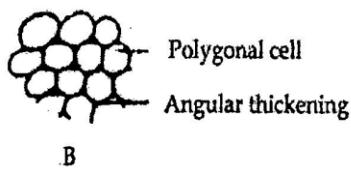
29. When a piece of magnesium ribbon is brought near the flame of Bunsen burner, it is observed that :
(a) Tip of the magnesium ribbon becomes red hot but it does not burn with a flame
(b) The magnesium ribbon burns with a dazzling white flame
(c) The magnesium ribbon melts (d) Lot of smoke is produced

30. When an onion peel cell is observed under a compound microscope the part that can be observed is :
(a) Nucleolus (b) Ribosomes (c) Nucleus (d) Endoplasmic Reticulum

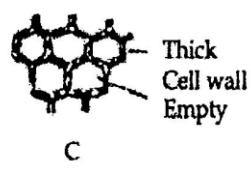
31. Given below are diagrams of plant cells. The diagram which represents parenchyma is :



A



.B



1

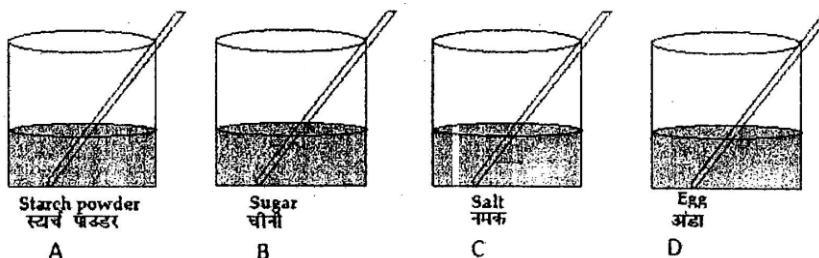
32. When a mixture of sand, chalk and sodium chloride is dissolved in water and then filtered, what will be left on the filter paper and what is it called?

33. The minimum force required to just move a wooden block

- (a) Increases by placing it on smooth surface (b) Decreases by placing it on rough surface
(c) Increases by decreasing the weight of the block (d) None of these

II. Question numbers 34 to 36 carry two marks each

34. Four students A, B, C and D are asked to prepare colloidal solutions. The following diagrams show the preparation done by them. Name the student who will be able to prepare colloidal solutions. Write two properties of colloidal solutions.



35. Neha's mother is a good cook. She uses natural colours to give colours to food stuffs like she uses turmeric for yellow colour spinach for green colour and pomegranate for reddish colour. She always avoids synthetic food colours. Answer the following questions based on above information :

- (a) Name the technique used to separate pigments from natural colours.
(b) Write the principle of that technique.

36. A student puts five raisins each in two beakers A and B. Beaker A contained 50 ml of distilled water at room temperature and beaker B had 50 ml of ice cold water. After sometime what will be the observation of the student? State reason for this observation.



**ALL INDIA SAINIK SCHOOLS
ENTRANCE EXAMINATION : 2014
SUBJECT : SCIENCE**

Max. Marks : 75

SECTION : A

Time : 2 : 30 min.

I. Question numbers 1 to 15, do as directed

(1x15=15)

Fill in the blanks :

1. Blue green algae fix _____ directly from air to enhance fertility of soil.
2. Species found only in a particular area is known as _____.
3. Synthetic fibres are synthesized from raw material called _____.
4. Phosphorus is a very _____ non metal.
5. Process of separation of different constituents from petroleum is called _____.

Select the correct Answer.

6. The most common carrier of communicable diseases is
 - (a) Ant
 - (b) Housefly
 - (c) Dragonfly
 - (d) Spider
7. Which of the following can be beaten into thin sheets
 - (a) Zinc
 - (b) Phosphorus
 - (c) Sulphur
 - (d) Oxygen
8. Unwanted sound is called as
 - (a) Music
 - (b) Pitch
 - (c) Noise
 - (d) Shrill
9. The process of depositing a layer of any desired metal on another material by means of electricity is called
 - (a) Mixing
 - (b) Electrolyting
 - (c) Electroding
 - (d) Electroplating
10. Which of the following is NOT a planet of the sun?
 - (a) Sirius
 - (b) Mercury
 - (c) Saturn
 - (d) Earth

Mark 'T' if the statement is True and 'F' if it is False.

11. Generally, non metals react with acids. ()
12. Coke is almost pure form of carbon ()
13. Kerosene is not a fossil fuel. ()
14. Unicellular organisms have one celled body. ()
15. An embryo is made up of a single cell. ()

Write answers within the space provided under the questions:

(2x10=20)

16. Does pure water conduct electricity? If not what can we do to make it conductive.
17. Explain why gliding friction is less than static friction.
18. A pendulum oscillates 40 times in 4 seconds. Find its time period and frequency.
19. Define
 - (a) Force of Gravity
 - (b) Pressure
20. Define adolescence
21. Give two differences between Zygote and foetus
22. Nylon is used for making parachutes, car seat belts and ropes for rock climbing. Why?
23. List condition under which combustion can take place.



24. List two advantage of using CNG & LPG as fuels

25. What is malleability? Give two examples of malleable metals.

Write answers within the space provided under each questions:

(3x10=30)

26. What is Marble Cancer? Write the air pollutants that are affecting the beauty of Taj Mahal.

27. Why is the distance between stars expressed in light years? What do you understand by the statement that a star is eight light years away from the earth?

28. Explain why plastic containers are favoured for storing food?

29. What are the major groups of micro organisms?

30. What is constellation? Name any two constellation.

31. Explain the reason why water is not used to control fires involving electrical equipment?

32. Why Sodium and Potassium are stored in Kerosene?

33. Why are children/infants given vaccination?

34. Briefly explain types of combustion.

35. Draw labeled diagrams of plant cell and animal cell

36. Write Short notes on

(a) Cytoplasm

(b) Nucleus of a cell

(5)

37. Briefly answer the following questions :

(a) Why porters place a round piece of cloth on their head when they have to carry a heavy load? **(3)**

(b) An inflated balloon was pressed against a wall after it had been rubbed with a piece of synthetic cloth. It was found that, the balloon sticks to the walls. What force might be responsible for attraction between the balloon and the wall? **(2)**



INDRAPRASTHA INTERNATIONAL SCHOOL
SUMMATIVE ASSESSMENT – I : 2015 – 2016
SUBJECT : SCIENCE

Max. Marks : 90

SECTION : A

Time : 3 : 00 hr

I. Question numbers 1 to 3 carry one mark each

1. State the significance of membrane biogenesis.
2. State the condition under which a body travels a certain distance and yet its resultant displacement be zero.
3. Mention two activities undertaken for improvement of crop yield.

II. Question numbers 4 to 6 carry two marks each

4. What is endocytosis? Name an organism that feeds by this method.
5. Chloroplast and mitochondria are referred to as semi-autonomous organelles. Justify.
6. State two differences between leucoplast and chromo last.

III. Question numbers 7 to 17 carry three marks each

7. A moving train is brought to rest in 20 seconds by applying brakes. Find the velocity with which the train was initially moving, if the retardation due to brakes is 2m/s^2 .
8. (a) Why is milk considered to be a heterogeneous mixture?
(b) A solution is made by dissolving 25 grams of sugar in 175 grams of water. Calculate the concentration of the sugar solution.
9. Suggest a suitable method to separate the components of these mixtures. Also write the basic principle of each method.
(a) Butter from curd; (b) Oil from water; (c) Camphor from common salt
10. (a) Write the difference between uniform motion and non-uniform motion.
(b) Mention the nature of the motion of a body whose distance-time graph is a straight line parallel to the time axis.
11. (a) State Newton's third law of motion.
(b) When a bullet is shot from a rifle, the rifle recoils back. Why?
12. (a) What do you mean by inertia of a moving body?
(b) Calculate the force required by a car to change its velocity from 30 m/s to zero in 10 seconds. The mass of the car is 1500 kg.
13. (a) What is the effect on the gravitational force between two objects, if
(i) the mass of one object is doubled?
(ii) the distance between the 2 objects is doubled?
14. (a) Differentiate between mass and weight.
(b) A man buys 2 Kg of gold at the poles. Will its weight increase or decrease at the equator?
15. Give reason for each of the following :
(a) We get a crunchy and granular feeling when we chew pear fruit
(b) Cells of sclerenchyma tissue have a narrow lumen.
16. (a) Explain composite fish culture.
(b) State one merit and one demerit of this system.
17. (a) What is green maturing?
(b) Why should preventive measures and biological control methods be preferred for crop protection?

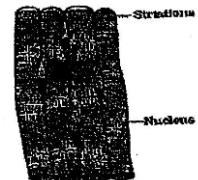
IV. Question numbers 18 to 24 carry five marks each

18. (a) name the connective tissues which helps in repair of tissues.
(b) State the location of the tissue named above and also mention one of its functions.

- 19.** How will you separate a mixture containing petrol (boiling point 95°C) and acetone (boiling point 56°C) which are miscible with each other? Describe with the help of a well-labelled diagram.
- 20.** (a) Convert - 23°C into Kelvin.
 (b) Name the technique which is followed in separation of iron pieces from metal scrap.
 (c) Name the types of colloids in which the dispersed phase and dispersing medium are respectively :
 (i) Solid and gas (ii) Solid and Solid (iii) Solid and liquid
- 21.** (a) Draw a well-labelled diagram of chloroplast. (b) What happens when
 (i) almonds are soaked in water?
 (ii) concentrated solution of fertilizer is applied to green grass lawn?
 Give a reason in support of your answer.
- 22.** (a) Give a reason for each of the following statement : -
 (i) Evaporation causes cooling (ii) Heat is unbearable after rain in hot season.
- 23.** (a) Draw the velocity-time for an object which is undergoing uniform retardation.
 (b) Derive the second equation of motion, graphically.
 (c) A stone is dropped from a height of 50m. Calculate its velocity just before it touches the ground.
 (take $g = 10\text{m/s}^2$)
- 24.** (a) While playing cricket, Karan advised his friend Rohan not to catch the ball when it is high in the air.
 (i) Why did Karna advise him so?
 (ii) What values would you appreciate in Karan's behavior? (any two)
 (b) A bullet of 30 g moving at 150m/s hits and sticks to a wooden block of 40kg. What is their combined velocity?

SECTION : B

I. Question numbers 25 to 33 carry one mark each

- 25.** 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
- 26.** 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
- 27.** Which one of the following is a suspension?
 (a) Face cream (b) Jelly (c) Paints (d) Milk of Magnesia
- 28.** Define water of crystallization.
- 29.** When magnesium ribbon burnt in the air, the product formed is _____ in colour.
 (a) Silver (b) Brown (c) Yellow (d) Blue
- 30.** Which stain is used for preparing temporary mount of animal cell?
- 31.** 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 celles (d) collenchymas cells
- 32.** The boiling point of a liquid is very high, what does it indicate?
- 33.** Define the term 'balanced force'.

II. Question numbers 34 to 36 carry two marks each

- 34.** Under which category of mixture will you classify alloys and why?
- 35.** Why is ice at 273 K more effective in cooling than water at the same temperature?
- 36.** (a) Name the protein present in muscles which is responsible for movement.
 (b) Name the tissues that increase the girth of stem of a plant.

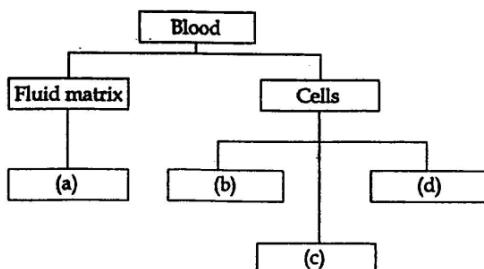
SUMMATIVE ASSESSMENT – I : 2015 – 2016
SUBJECT : SCIENCE

Max. Marks : 90**SECTION : A****Time : 3 : 00 hr****I. Question numbers 1 to 3 carry one mark each**

1. Identify the plastid which contains a pigment necessary for photosynthesis.
2. Out of the four physical quantities associated with the motion of an object viz, Force, Velocity, Acceleration and momentum which one remains constant for all bodies large or small, undergoing free fall?
3. Two balls of different masses are thrown vertically upwards with same velocity. Which one of them will rise to the greater height?

II. Question numbers 4 to 6 carry two marks each

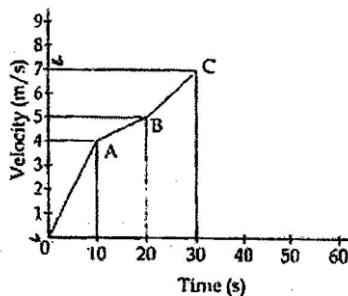
4. We feel cool after doing vigorous exercise. Why?
5. Mention the different components of blood in the following diagram?



6. Which Newton's law of Motion is applied in flight of a bird? Support your answer with suitable reason.

III. Question numbers 7 to 18 carry three marks each

7. What do you understand by a colloidal solution? Why do they show Tyndall effect?
8. Explain any three factors which affect the rate of evaporation.
9. You are provided with a mixture of Iron filings and sulphur. Answer the following questions.
 - (a) Which technique can be used to separate the components of mixture?
 - (b) Name the gas which is produced when the mixture is treated with dilute sulphuric acid at room temperature?
 - (c) Write two properties of gas evolved in part (b).
10. Discuss the shape of the following cel organelles :
Jysosomes, mitochondria and Golgi apparatus.
11. Differentiate between the three types of muscular tissues.
12. State Newton's first law of motion. Why is it known as the law of inertia?
13. Calculate the gravitational force of earth acting on your friend of mass 60 kg. (Given mass of earth = 6×10^{24} kg and radius of earth = 6.4×10^6 m, $G = 6.7 \times 10^{-11} \text{ Nm}^2\text{kg}^{-2}$)
14. The velocity – time graph shown below represents the motion of a body : O₂



- (a) During which interval of time, the body is moving with maximum acceleration?
- (b) Calculate the average velocity for the entire journey,



- 15.** A ball is thrown vertically upwards and returns to the thrower after 12 sec ($g = 9.8 \text{ m/s}^2$) find :

 - (i) The velocity with which it was thrown up
 - (ii) The maximum height it reaches
 - (iii) Its position after 8 sec.

16. When will you say a body is in :

 - (i) Uniform acceleration
 - (ii) Non-uniform acceleration

Draw a velocity – time graph for each type of motion

17. 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.

 - (i) What is meant by genetically modified crops?
 - (ii) What are the desired agronomic characters for fodder and cereal crops?
 - (iii) In your opinion what should be done so that the modern agriculture technology is adopted by most of the farmers?

18.

 - (a) Name the crop which can be grown in combination to fish culture
 - (b) Mention the feeding zones of Catla, Rohu, Mrigals, common carp in.

IV. Question numbers 19 to 24 carry five marks each

- 19.** Observe the following situations and identify the techniques associated with each :

 - (i) Milk is churned to separate cream from it
 - (ii) A mixture of sand and water is separated
 - (iii) Air is liquefied to separate liquid O₂
 - (iv) By using filter paper, different colors present in a dye are separated
 - (v) Mixture of ammonium chloride and sand is heated

20. When a solid melts the temperature of the system does not change after the melting point is reached even when we continue to supply heat? Give reason

Define latent heat of vaporization. Which will cause more severe burns boiling water or steam and why?

21. Do all cells of our body look alike in terms of shape, size and structure? What similarities do they have? Illustrate by drawing diagrams of various cells present in human body.

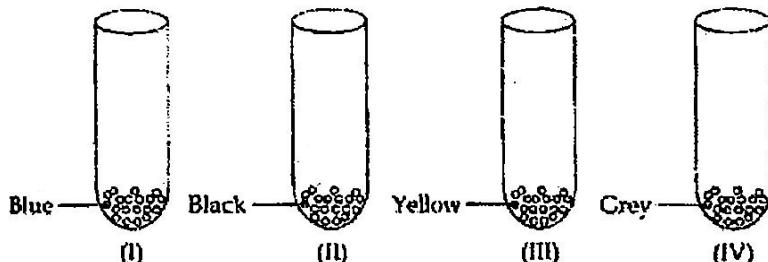
22. State Newton's First Law of Motion – why is this law called law of inertia? Define the term inertia and state the relationship between mass and inertia? Explain why it is advised to tie any luggage kept on the roof of a moving vehicle with a rope.

23. (a) What is meant by uniform circular motion? Give its two examples.
(b) A train leaves New Delhi railway station at 09:00 AM and reaches Jaipur, which is at a distance of 260 km at 12:45 PM. The train reaches Alwar (at distance 150 km from New Delhi) at 11:30 AM and stops there for 15 minutes.
 - (i) What is the reference point for the motion of the train?
 - (ii) What is the average speed of the train between Alwar and Jaipur?

24. In a fresh water composite fish culture, mention the basis of selection of varieties of fishes. Name any four varieties of fishes selected along with their feeding zones. Write one advantage and one problem of composite fish culture.

SECTION : B

I. Question numbers 25 to 33 carry one mark each



Which test tube contains sulphur powder?

- 29.** Students were asked to study the reaction between barium chloride and sodium sulphate. Four different methods are given below :

	Procedure	Observations
(i)	Mixed powder of barium chloride and sodium sulphate	The colour of mixture changes to yellow
(ii)	Mixed solutions of barium chloride and sodium sulphate	Thick white precipitate is formed
(iii)	Added solution of barium chlpride to sodium sulphate powder	Solution becomes turbid
(iv)	Added solution of barium chloride to sodium sulphate sodium	No change is observed

The correct method is :

- (a) (i) (b) (ii) (c) (iii) (d) (iv)

- 30.** Which one of the following sets is the correct sequence for preparing a temporary mount of an onion peel?

- (a) (i) take out the onion peel (ii) keep the peel on the slide
(iii) add a drop of glycerin on it (iv) add a few drops of safranin stain

- (iii) add a few drops of safranin stain and transfer to the slide
 - (iv) add a drop of glycerin on it
 - (v) cover it with a cover slip

- (c) (i) take out the onion peel (ii) keep it on a slide and add safran
(iii) transfer it to water in a pertridish (iv) remove water and add glycerin

- 31.** A figure depicting the parts of a neuron is given below. The correct identification of the label 1, 2, 3, 4 respectively is :

- (a) dendrite, cytoplasm, nucleus, nerve fibre
(c) dendrite, cell body, nucleus, axon

(b) cilia, endoplasmic reticulum, nucleus, nerve fibre
(d) dendrite, cyton, nucleus, axon



- 32.** Ammonium chloride sublimates on heating. It means that on heating ammonium chloride :

 - (a) First melts at its melting points and then changes in the a gas at its boiling point
 - (b) directly changes from solid to vapours without melting
 - (c) loses its water of crystallization
 - (d) condenses from the gaseous state to the liquid state

33. A student performed the experiment “To establish relationship between weight of a rectangular wooden block lying on a horizontal surface and minimum force requires to just move it using a spring balance”. If the weight of the given wooden block is nearly 200g wt and three known weight of 100g wt each are to be successively places on the wooden block to take three more readings, then which one of the following spring balances, available in the laboratory would you select for the best results in the experiment? It is known that a force of 90g wt is required to just move the block on the surface.

 - (a) Range 0-100g wt; least count 1.0g wt
 - (b) Range 0-200g wt; least 2.0g wt
 - (c) Range 0-250g wt; least count 2.0g wt
 - (d) Range 0-500g wt; least count 5.0g wt

II. Question numbers 34 to 36 carry two marks each

- 34.** You observe some suspended particles in the given solution. How would you determine experimentally the type of solution?

35. List two important precautions which a student should take while determining the boiling point of water?

36. Raman while doing an experiment to find out the percentage of water absorbed by raisins measured the mass of dry raisins as 50g. He soaked the raisins in water for four hours and again measured the mass as 80 g. Calculate the percentage of water absorbed by the raisins. He then placed swollen raisins in concentrated salt solution for four hours. What will he observe?

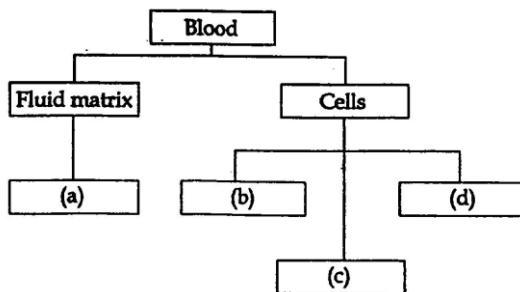
ARMY PUBLIC SCHOOL, MHOW
SUMMATIVE ASSESSMENT – I : 2015 – 2016
SUBJECT : SCIENCE

Max. Marks : 90**SECTION : A****Time : 3 : 00 hr****I. Question numbers 1 to 3 carry one mark each**

1. Name one solution each to stain slides of plant cell and animal cell.
2. If the distance between two masses is increased four times, by what factor the gravitational force acting on them would become?
3. While playing football the goalkeeper didn't get sufficient time to stop a fast ball shot towards him. Why did he hurt his hand while doing so?

II. Question numbers 4 to 6 carry two marks each

4. How is heating of sugar and heating of ammonium chloride different from each other? Explain your answer.
5. Mention the different component of blood in the following diagram?



6. A train travels the first 15 km at a uniform speed of 30 km/h, and the next 75 km at a uniform speed of 50 km/h. Calculate the average speed for the entire train journey.

III. Question numbers 7 to 18 carry three marks each

7. (a) Identify two non-metals from the following elements :
Carbon, Sodium, Chlorine, Neon, Platinum
(b) Name the appropriate method to separate nitrogen from air.
(c) Identify dispersed phase and dispersion medium in foam and rubber.
8. A substance 'A' has fixed shape and volume. It is incompressible. Predict the state of the substance. Enlist four properties of this state of matter.
9. (a) Sodium chloride contains two elements, but it is still a pure substance. Give reasons.
(b) How would you confirm that a colourless liquid given to you is pure water?
10. Tabulate the difference between nucleoid and nucleus giving three points.
11. Name the following :
(i) Tissue which makes the plant hard and stiff.
(ii) Tissue which transports water and minerals vertically.
(iii) Tissue which allows easy bending in various parts of a plant without breaking.
(iv) Tissue which provides buoyancy to the plants to help them float.
(v) The chemical present in cells of cork which makes them impervious to gases and water
(vi) Tissue which transports food from leaves to other parts of the plant.
12. A body of mass 10 kg is moving with a velocity of 1 ms^{-1} . Find (i) The magnitude of the force required to stop the body in 10 s. (ii) The distance the body will move through before coming to rest.
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. ($g = 9.8 \text{ ms}^{-2}$)
(ii) If weight of a body is 50 N. What is its mass? ($g = 9.8 \text{ ms}^{-2}$)



- 14.** A truck is travelling at a constant velocity of 10 ms^{-1} when the driver sees a cow 50 m in front of him on the road. He hits the brakes to stop the truck. The truck retards at a rate of 1.25 ms^{-2} . His reaction time to hit the brakes is 0.5 seconds. Will the truck hit the cow?
- 15.** (i) Explain how action and reaction act on two different bodies? Explain with an example.
(ii) Why it is difficult to walk on a slippery road. State law of conservation of momentum.
- 16.** Name the physical quantities denoted by :
(a) the slope of the distance-time graph
(b) the area under velocity-time graph
(c) the slope of velocity-time graph
- 17.** India is a country with three fourth of the population engaged in agriculture. Even though financial conditions of some farmers 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 Government's Kisan channel solved all their apprehensions.
(i) What is meant by genetically modified crops?
(ii) What are the desired agronomic characters for fodder and cereal crops?
(iii) In your opinion what should be done so that the modern agriculture technology is adopted by most of the farmers?
- 18.** How do Sunhemp or Guar help in crop production management? How are these better than fertilizers?

IV. Question numbers 19 to 24 carry five marks each

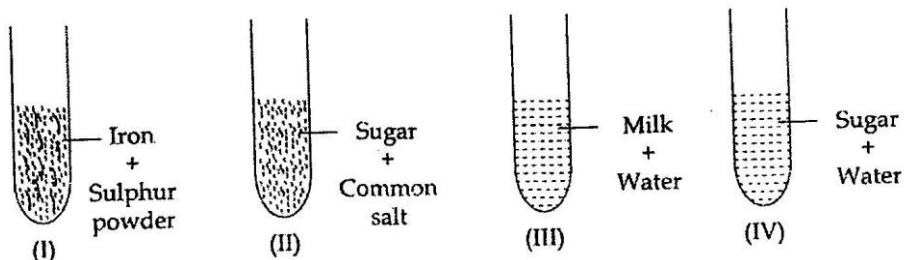
- 19.** Differentiate between an element and a compound. Categorize the following substances into elements and compounds – sodium chloride, Iodine, water, 24 carat gold, Oxygen gas, Carbon.
- 20.** (a) Explain the effect of temperature on the movement of particles of matter.
(b) Give reason why we get smell of hot sizzling food even when we are metres away from it?
- 21.** Based upon their function and structure, identify the following tissues and write one characteristic feature of each:
(i) That stores fat
(ii) That connects muscles to bones
(iii) That is present in the ear, and nose
(iv) That is a connective tissue with fluid matrix
(v) That contains contractile proteins
- 22.** (a) Write the formula to find the magnitude of gravitational force between earth and an object on earth's surface.
(b) Derive how does the value of gravitational force 'F'
(i) distance between them is reduced to half, and (ii) mass of one object is increased four times
- 23.** (a) State law of conservation of momentum
(b) Derive an expression for it.
(c) An object of mass 100 kg is accelerated uniformly from a velocity 5m/s to 8m/s in 2s. Calculate the initial and final momentum of the object.
- 24.** List major factors for which the crop variety improvement is done. Illustrate any two of them.

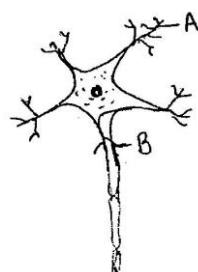
SECTION : B

I. Question numbers 25 to 33 carry one mark each

- 25.** In an experiment to find the presence of adulterant in arhar dal con. Hydrochloric acid is used to test :
(a) the presence of starch in a food sample
(b) the presence of metanil yellow in dal
(c) the absence of starch in a food sample
(d) the absence of impurity in dal
- 26.** A student was asked to test the presence of metanil yellow in dal. He took its sample in a test-tube and added 10 mL of water to it. By mistake he added a few drops of iodine solution in test-tube. He would observe that :
(a) yellow colour of iodine persists in solution
(b) colour of solution changes to blue black
(c) colour of solution changes to blue
(d) dark pink colour appears in the solution

- 27.** Which test tube contains the mixture of two elements?





II. Question numbers 34 to 36 carry two marks each

- 34.** Write the procedure you need to follow for preparing a solution of starch in water State the precaution which is most important and one must follow essentially.

35. While determining the melting point of ice students were asked to stir the ice continuously why? List two reason.

36. While performing the experiment to determine the water imbibed by raisins, a student soaked 10g of raisins in 100mL of water. He soaked the raisins overnight and recorded the weight of the swollen raisins, which was 18g. Find the percentage of water imbibed by raisins.