G.L ANUSHA
IX-'D'
15

SCHOOL

16 September 2016

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 **two marks.**

SECTION-A

1. State the location of genes in the cell. 1

2. What do the following devices measure in a car ? 1

   (i) Odometer (ii) Speedometer

3. When the mouth of a balloon filled with air is untied, the air releases downwards, and balloon moves upwards. Identify action and reaction in this case. 1

4. List two points of difference between homogeneous and heterogeneous mixtures. 2

5. Describe the process of shrinking of a cell on being put in a strong salt solution. 2

6. Explain an activity to show that, during a free fall heavier and lighter objects accelerate at the same rate. 2

7. Why the following are called chemical changes? 3

   (i) Burning of wood
   (ii) Rusting of iron
   (iii) Digestion of food

8. Explain the process of sublimation with the help of a diagram. 3

9. A solution contains 110g of salt in 440g of water. Calculate concentration of solution in terms of mass by mass percentage. Also state whether this solution is saturated or unsaturated. 3

10. What is the fundamental unit of life? Who discovered it? How can they be observed? 3

11. Differentiate between different types of simple permanent tissues. 3

12. The Newton's second law of motion is often seen in action in our everyday life. Give three experiences of your own. 3

13. Find what happens to the gravitational force between two objects when : 3

(i) Distance between them is doubled.

(ii) Masses of both the objects are doubled.

14. Define the term acceleration. State an example of uniformly accelerated motion. A train starting from stationary position and moving with uniform acceleration attains a speed of 36 km/h in 10 minutes. Find its acceleration. 3

15. Write three points of difference in mass and weight of an object. 3

16. The brakes applied to a car produce an acceleration of 6 ms^{-2} in the opposite direction to the motion. If the car takes 2 s to stop after the application of brakes, calculate the distance it travels during this time. 3

17. Aakanksha's mother had grown vegetabels like bottle gourd, capsicum bitter gourd and tomatoes inside the fencing of her home. One morning while she was busy in her work she asked Aakanksha to water the plants but Aakanksha didn't comply. She told her that as we need food for development, plants also require nutrients, which they get from air, water and soil. Deficiency of these nutrients affects growth and susceptibility to diseases. 3

(i) Name the nutrients supplied by air and water to the plant.

(ii) What are macro nutrients and why are they called so ?

(iii) "Nature provides all the essentials for the plant growth and each component plays an important role". Learning from nature, mention two values that everyone in a family should imbibe.

18. Explain composite fish culture. Which special parameter is to be kept in mind during composite fish culture ? 3

19. You are given a mixture of alcohol and water. Explain the process to separate it into its constituents. Draw a labelled diagram of the technique used. 5

20. (a) Define evaporation and explain the role of speed of wind at the rate of evaporation. 5

(b) Why do we feel cool when we sit under fan during summer ?

21. Answer the followings : 5

(a) Name the constituents of phloem tissues.

(b) Write the specific function of cardiac muscle.

(c) State two differences between tendon and ligament.

(d) Name the tissue that :

(i) forms the inner lining of our mouth.

(ii) forms the soft parts of leaf, stem, roots and fruit.

(e) Write two functions of adipose tissues.

22. Explain the following phenomena on the basis of Newton's Laws of Motion : 5

(i) Falling of buildings during an earthquake.

(ii) Shattering of car windows due to a bomb blast.

(iii) Cell phone breaks into pieces on falling from a table.

23. State the law of conservation of momentum. Express it mathematically. 5
Two balls of masses 100g and 200g moving in the same direction with velocities 2 ms^{-1} and 1 ms^{-1} respectively collide with each other. If the velocity of the ball of mass 200g after collision becomes 1.165 ms^{-1}, find the velocity of the other ball.

24. What is the basis of crop selection in intercropping and crop rotation ? Write the advantages of these two types of cropping patterns. 5

SECTION - B

25. A substance 'X' was added to the test tube containing a mixture of arhar dal and water, to test the presence of metanil yellow. The colour of the solution changed to magenta. 'X' is : 1

(a) conc. sulphuric acid (b) conc. hydrochloric acid

(c) conc. nitric acid (d) conc. sodium hydroxide

26. Stored form of Carbohydrates in plants generally are : 1

(a) Vitamins (b) Glycogen

(c) Amino acids (d) Starch

27. When iron filings and sulphur powder are taken in china dish, mixed properly and heated strongly then : 1

(a) an element is formed.

(b) a compound is formed.
(c) a homogeneous mixture is formed.
(d) a heterogeneous mixture is formed.

28. The method used to separate sulphur from the mixture of iron filings and sulphur powder is : 1
(a) by dissolving sulphur in carbon disulphide
(b) by using a bar magnet to separate iron
(c) neither (a) nor (b)
(d) both (a) and (b)

29. The colour of anhydrous copper sulphate is : 1
(a) yellow (b) blue
(c) white (d) green

30. While preparing temporary mount the reagent used to stain animal cell is : 1
(a) Methyl orange (b) Safranin
(c) Iodine (d) Methylene blue

31. The brain, spinal cord and nerves are all composed of the nervous tissue. The cells of this tissue are called : 1
(a) nephron (b) neuron
(c) adipose (d) tendon

32. On sublimation of ammonium chloride, salt and iron-filings, the component found to stick to the inverted funnel is /are : 1
(a) ammonium chloride
(b) iron filings
(c) salt
(d) water vapours

33. While doing experiment the students observed the reading of the scale on the spring balance. These measure the : 1
(a) weight (b) mass
(c) acceleration (d) range

34. Milk is a colloidal solution. Are the particles uniformly spread throughout the solution? Can we see them with naked eyes? How do they show Tyndall effects? Explain. 2

35. What should be the temperature range of the mercury thermometer to be used for determining the melting point of ice? What is the correct position of the thermometer to get accurate reading? 2

36 Write the formula for determining the percentage of water absorbed by raisins ? State one important precaution for this experiment. 2