SUMMATIVE ASSESSMENT-I (2015-16) (BB)
SCIENCE
CLASS-IX

Time allowed : 3 hours   **Maximum Marks : 90**
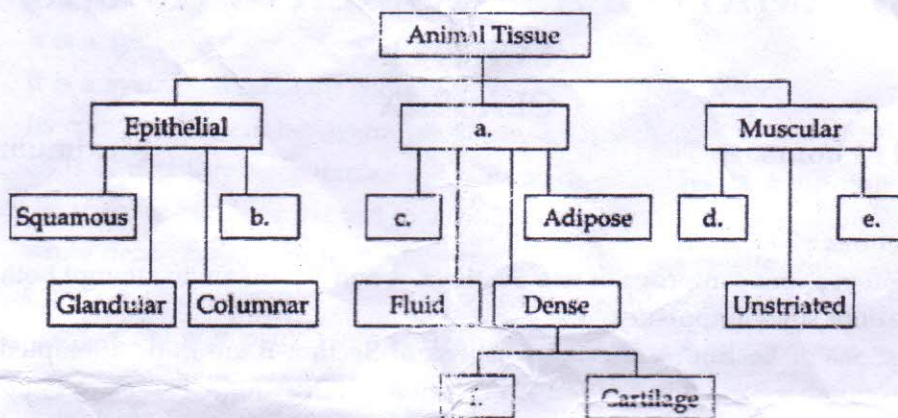
General Instructions :

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 **Section-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 one difference between plant tissue and animal tissue in the pattern of growth.   1
2. What do the following devices measure in a car?   1
    (i)   Odometer   (ii)   Speedometer
3. What is the total momentum of the bullet and the gun before the gun is fired?   1
4. Why common salt is said to be a substance and salty water a mixture?   2
5. Give one word for the following: 2
    (1)   Group of cells with similar structure and designed to give highest efficiency of function.
    (2)   The process of taking up a permanent shape, size and function.
    (3)   Animal tissue connecting muscle to bones.
    (4)   Kidney shaped cells that enclose stomata.
6. The mass of sun is 2×10^{30} kg and that of earth is 6×10^{24} kg. If the average distance between the sun and the earth be 1.5×10^8 km, calculate the force of gravitation between them. (Take $G = 6.7 \times 10^{-11}$ Nu^2 kg^{-2})   2
7. What is meant by a true solution? Write its any two properties and two examples.   3
8. Explain by an activity that different states of matter have varied force of attraction between the particles.   3
9. Define sublimation. Give two examples of substances that sublime. Mention a situation from your daily life where you observe this process.   3
10. List two similarities and two dissimilarities between a plant cell and an animal cell?   3

IX/Science   **1**   **P.T.O.**

11. Complete the following flow diagram: 3

```
                        Animal Tissue
                              |
        ┌─────────────────────┼─────────────────────┐
    Epithelial                a.                 Muscular
        |                      |                     |
    ┌───┴───┐            ┌──────┴──────┐        ┌─────┴─────┐
 Squamous   b.           c.         Adipose     d.          e.
                              |           |                 |
        ┌───────┬───────┐  ┌──┴──┐    ┌──┴──┐          Unstriated
    Glandular Columnar    Fluid      Dense
                                        |
                                   ┌────┴────┐
                                   i.     Cartilage
```

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
    (i) The velocity with which the gun recoils
    (ii) The force exerted on gunman due to recoil of the gun.

13. State the universal law of gravitation. Mention four phenomena which can be explained by this law. 3

14. A fireworks shell is accelerated from rest to a velocity of 50 m/s over a distance of 0.250 m. Calculate the acceleration. How long will it take for acceleration to become zero? 3

15. (a) As the altitude increases, how do the weight and mass of the body vary? 3
    (b) A stone resting on the ground has a gravitational force of 20 N acting on it. What is the weight and mass of the stone? (Take g = 10 ms^{-2})

16. Ram stops a box from sliding down an inclined plane. What is the nature of net force acting on the object (Balanced/unbalanced)? What are the forces acting on the object in sliding down? 3

17. Vishnu's father had two healthy Sahiwal cows. Vishnu told his father that the lactation period of cows can be increased by cross breeding cattle with foreign breeds and it was possible artificially also. In this way if villagers participated in cross-breeding programme, they would get a breed of cattle which would produce higher milk yield. 3
    (i) What is meant by lactation period?
    (ii) Name two exotic cattle breeds with long lactation period.
    (iii) What values are exhibited by Vishnu?

18. Mention three ways by which the insect pests attack the plants. 3

19. Boiling point of alcohol is 78°C and that of water is 100°C. Explain the separation technique will you use to separate them from a mixture? Which liquid will be separated first and which will be left behind? Draw the diagram to show the apparatus and the set up used in the process. 5

20. (a) Mention two differences between Boiling and evaporation. 5
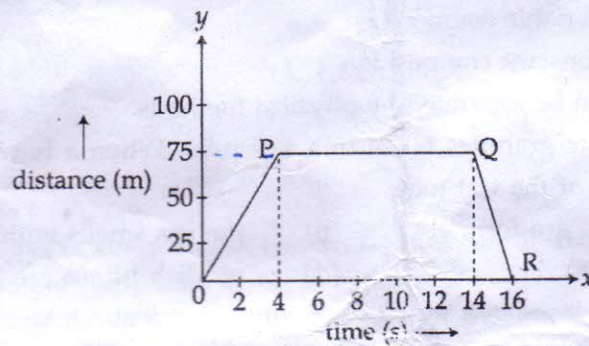   (b) Explain the role of temperature on the rate of evaporation with the help of an activity.

21. Based upon their location and function differentiate between the three type of meristematic tissues. Draw a diagram to show the location of these tissues in a plant. 5

22. (a) Is it possible for a body to be in circular motion with constant velocity? Give reason. 5

(b) The graph given below is the distance-time graph of an object.

(i) Calculate the speed of the object during first four seconds of its journey.
(ii) During which time interval was its stationary?
(iii) Find the speed of the object. In the last 2s of the journey.

23. A player catching a moving ball moves his hands backwards. Explain why? A force 40N acting on a body of mass 10 Kg changes its velocity from 5 m/s to 25 m/s Determine: 5

(i) Acceleration   (ii) time for which force acts
(iii) Distance covered

24. (i) What do you understand by genetically modified crops? 5
(ii) What are the desired agronomic characters for fodder and cereal crops?
(iii) What are the adantages of having improved varieties by hybridisation?

SECTION-B

25. A sample solution on adding conc. hydrochloric acid turned magenta. The sample has: 1

(a) metanil yellow   (b) starch

(c) iodine solution   (d) all of the above

26. In a science laboratory students were given different samples and were asked to prepare their solutions in water. Students prepared four solutions in test tubes. 1

Solution A containing boiled potato extract.

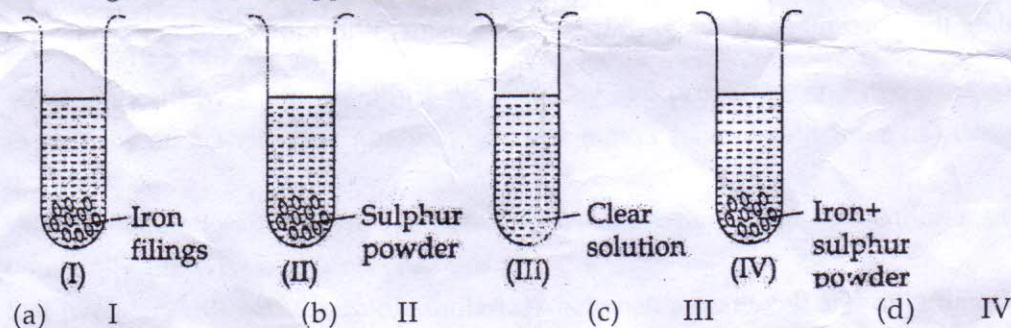Solution B containing arhar dal.

Solution C containing wheat flour.

Solution D containing sugar.

They added a few drops of iodine solution to each solution. Which test tubes will show positive test for starch?

(a) Test tube A and B   (b) Test tube B and C

(c) Test tube C and D   (d) Test tube A and C

27. When a mixture of iron filings and sulphur powder is dissolved in carbon disulphide, the resulting solution will appear as in test tube: 1

(a) I   (b) II   (c) III   (d) IV

IX/Science   3   P.T.O.

28. Which one of the following is not the property of a mixture? 1
   (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. Dil H_2SO_4 is added to zinc granules taken in a test tube. When a burning match stick is brought near the mounth of the test tube: 1
   (a) white dense fumes are formed   (b) the gas smells with pungent odour
   (c) a 'pop' sound is heard   (d) reddish fumes are formed

30. The thin peel of onion is placed in a watch glass containing water because: 1
   (i) It prevents the peel from folding
   (ii) It prevents the entry of air bubbles into it
   (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. Dead cells, with lignified cell wall and without nucleus are the description of a simple permanent tissue which is: 1
   (a) parenchyma   (b) collenchyma
   (c) sclerenchyma   (d) both (a) and (b)

32. The colour of the pure ammonium chloride powder is: 1
   (a) white   (b) blue   (c) green   (d) red

33. Taking into consideration Newton's third law of motion, from the statements given below, the false statement is: 1
   (a) when an object exerts a force on another object, the second object also exerts a force back on the first object.
   (b) the two forces are equal in magnitude but opposite in direction.
   (c) both the forces act on the same object and not on different objects
   (d) the two opposing forces are termed as action and reaction

34. A student added find 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? 2

35. While doing an experiment to determine the melting point of ice, state the role of glass stirrer and mention the correct position of bulb of the thermometer. 2

36. While doing an experiment to find out the percentage of water absorbed by raisins a student recorded the mass of dry raisins as 4.0 g and mass of raisins after soaking in water as 7.0g. Calculate the percentage of water absorbed by raisins. Why do raisins get swelled up? 2