

**ST. ARNOLD'S CENTRAL SCHOOL, PUNE**  
**PERIODIC TEST-2, 2018-19**  
**SUBJECT: SCIENCE**

**STD : IX**

**MM : 80**

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**Section A**

1. Which separation technique will you apply for the separation of
  - (a) Oil from water
  - (b) Camphor from salt(1)
2. State Newtown's third law of motion. (1)
3. Differentiate between element and compound. (2)
4. A bullet of mass 20 g is horizontally fired with the velocity 150 m/s from a pistol of mass 2 Kg. What is the recoil velocity of the pistol? (2)
5. What are the desirable characteristics of *Apis mellifera* which makes it preferable for honey production ? (2)
6. a. Wax is heated in a china dish. How will the following change during heating-
  - i. Kinetic energy of particle
  - ii. Inter particle distance  
  - b. Melting points of three substances A, B, C are 52 °C, 152 °C and 80 °C. Arrange them in the decreasing order of the interpartical force of attraction in each of them. Give reason for your answer. (3)
7. a. To make a saturated solution, 36 g of sodium chloride is dissolved in 100 g of water at 293 K. Find its concentration at this temperature.  
  
  - b. Identify the solute and solvent in the following
    - i. sugar solution
    - ii. soda water(3)
8. Describe an activity which is used to separate mixture of acetone and water with well labeled diagram.

**OR**

8. What is chromatography? Describe an activity to separate different components of blue ink by using the technique of chromatography? (3)
9. a. Define Inertia.  
b. A shopkeeper shows three toys to a child made up of aluminum, steel and wood of same shape and volume. Which one of them would have highest inertia? Why? (3)
10. Prove that initial momentum of a system of two colliding masses is equal to their final momentum.

**OR**

Two balls A and B of masses  $M$  and  $2M$  are in the motion with velocities  $2v$  and  $v$  respectively. Compare

- i. Their inertia
  - ii. Their momentum
  - iii. The force needed to stop them in the same time. (3)
11. A circular track has a circumference of 3140 m with AB as one of its diameter. A scooterist moves from A to B along the circular path with uniform speed of 10 m/s. Find
- i. Distance covered by the scooterist
  - ii. Displacement of the scooterist.
  - iii. Time taken by the scooterist in reaching from A to B.

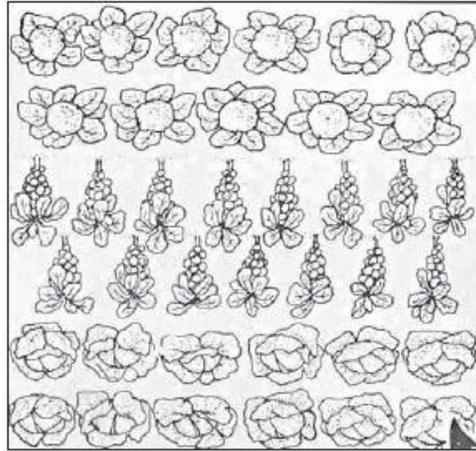
**OR**

- a. Give two points of difference between distance and displacement.
  - b. A train starting from a railway station and moving with uniform acceleration attains a speed of 40 Km/h in 10 minutes, find its acceleration. (3)
12. Draw a well labeled diagram of cardiac muscle found in human body. Write two differences between striated and smooth muscles. (3)

13. a. You can very easily bend the stem of a plant without breaking it. Name the permanent tissue in the plant which makes it possible. Where is it located? State any two characteristic features of the cells of this tissue.

b. Draw a labeled diagrams of the transverse section of the tissue. (3)

14. Observe the following picture and answer the following questions



a. Which type of cropping pattern is seen in this picture?

b. Define the cropping pattern.

c. What should be kept in mind regarding the types of crops, while following this type of cropping? (3)

15. Neelam attended an agriculture festival organized by her school. She herself belongs to an agriculture family. There she saw the harmful effects of using pesticides. Next day she saw her father filling the spay tank with pesticides to spray in their field.

i) Can you give some points that would help Neelam to convince his father to stop using pesticides in large quantities?

ii) What is the alternate method?

iii) What values are shown by Neelam? (3)

16. a. State the principle of centrifugation. Give its two applications.

b. Give two points of difference between solution and suspension.

c. List two properties of metals in which they differ from non-metals (5)

17. a. Define the following terms:

- i. Rigidity      ii. Compressibility      iii. Density

b. Archit dropped a crystal of potassium permanent into two beakers A and B containing hot water and cold water respectively. After keeping the beakers undisturbed for some time what did he observe and why? (5)

18. a. What does the odometer of an automobile measure?

b. Which one of the following is moving faster?

i. A motorbike moving with a speed of 300 meter per minute.

ii. A car moving with a speed of 36 Km /h.

c. A farmer moves along the boundary of square field of side 10 m in 40 s. What will be the magnitude of displacement of the farmer at the end of 2 minutes 20 seconds. (5)

19. a. State Newton's second law of motion and derive mathematical expression for the same.

b. In a cricket match why does a player lower his hands slightly while catching the ball?

**OR**

Give reasons and give the law related to following statement.

i. It is easier to push an empty box than to push box full of books.

ii. It is difficult for a fireman to hold a hose which ejects large amount of water with high velocity.

iii. It is difficult to stand still in a bus moving with continuously varying velocity.

iv. Any luggage kept on the roof of cars or buses is always tied with a rope.

v. In a high jump athletic event, the athletes are made to fall either on cushion bed or on a sand bed. (5)

20. a) What do you mean by a Meristematic tissue?

b) With the help of a neat labeled diagram explain different types of meristematic tissues.

**OR**

What is a Nervous tissue? Give its functions. Explain the structure of a neuron with a diagram. (5)

21. Why is mitochondria called 'power house of cell'? Give three similarities and one difference between mitochondria and plastid. (5)

**Section B**

22. What is colloidal solution? Describe its properties. (2)

23. What happens when we start heating a mixture of iron fillings and sulphur powder?  
Name the compound formed. Write the chemical reaction. (2)

24. Differentiate between onion peel cells and human cheek cells. (2)

25. Mention the location and function of parenchyma cells in plants.

**OR**

State the functions performed by parenchyma and sclerenchyma tissues. (2)

26. State and explain Archimedes principle. (2)

27. The range of the spring balance is from 0 to 250 g and number of divisions in the spring balance is 50. Find the least count of the spring balance. (2)