

Dear Parents,



Session 2018-2019 is progressing quite well. We just had our 'Orientation Session' with Primary, Middle and Secondary schoolers parents and it was heartening to see your approach, co-operation and support. APS family extends gratitude for it.

A warm welcome to students who have joined our school this session. We stand committed to providing quality education to our children. The teachers follow a detailed plan of instruction that is guided by CBSE and AWES. SAMC is our pillar of strength as our teachers focus on holistic development of our students. We shall certainly continue to implement our 'Systems Approach' to support all students by using interventions to help each child make academic progress. Progress is best assured when student, parents and school are working towards same goal. It's like when every player is an active member, the team is sure to be the best and everyone is a winner. So let's strive to be all winners!

For Summer Break Assignments, practice sheets are devised to ensure revisions for coming assessment. Kindly go to the website: [www.apsbinnaguri.org](http://www.apsbinnaguri.org) and follow these steps for the same

Steps to download:

- i. Browse the website→ Home page (first page of the website)
- ii. Then check the Bulletin Board→ link will be available.

OR

Home Page→ Click on 'APS News' option→ Choose Holiday Homework option from the dropdown menu.

We would also seek your co-operation to help lift up academics. We would welcome parents to offer their names for substitute facilitators/ teachers, judges for events round the year. Kindly e-mail at [apsbinnaguri1@gmail.com](mailto:apsbinnaguri1@gmail.com) or give your details at Front Desk.

We truly believe that an entire community is needed to empower our students to become successful citizens. I look forward to a great year and working with such an amazing community.

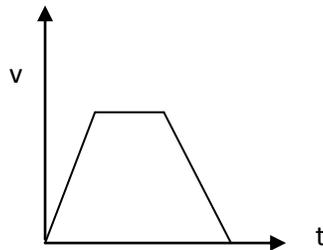
Awaiting your constructive suggestions.



**ARMY PUBLIC SCHOOL BINNAGURI**  
**SCIENCE PRACTICE SHEET 1, SESSION 2018-19**  
**SUB: PHYSICS**  
**CLASS: IX**

**CHAPTER: MOTION**

1. Rest and motion are relative terms. Explain.
2. Distinguish between distance and displacement.
3. Show that the displacement of a particle can be zero but distance can never be.
4. Name the device used to record the distance travelled by a car.
5. What do you mean by uniform and non uniform motion?
6. Distinguish between speed and velocity.
7. Define average velocity and instantaneous velocity.
8. Show that the average speed of a body cannot be zero but average velocity can be zero.
9. State the condition under which the average speed and average velocity of a body are equal.
10. What can you say about the velocity of a body which is moving with uniform acceleration?
11. What does the slope of a distance time graph give?
12. What does (i) the slope, (ii) the area under a curve of a velocity time graph give?
13. Draw the corresponding acceleration time graph.



14. Derive the equations of motion graphically.
15. Uniform linear motion is not accelerated but uniform circular motion is accelerated. Justify the statement.
16. A body starts from rest and accelerates uniformly at the rate of  $5 \text{ ms}^{-2}$  for 10 sec. Calculate the final velocity and the distance travelled.
17. A ball is thrown vertically upward with a velocity of  $10 \text{ ms}^{-1}$ . Calculate the height attained by the ball and the time taken to reach the maximum height.
18. A bullet moving with  $10 \text{ ms}^{-1}$  hits a wooden plank. The bullet is stopped when it penetrates the plank 2 cm deep. Calculate the retardation of the bullet.
19. A stone is attached to a string 1m long and then whirled round in a horizontal plane. It completes one rotation in 5 sec. calculate the linear speed of the stone.
20. A bike is moving with a speed of  $20 \text{ ms}^{-1}$ . Brakes are applied to stop the bike after it moves through 10 m. find the retardation and the time required to stop the bike.

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**ARMY PUBLIC SCHOOL BINNAGURI**  
**SCIENCE PRACTICE SHEET 2, SESSION 2018-19**  
**SUB: PHYSICS**  
**CLASS: IX**

**CHAPTER: MOTION**

Q1. A particle is moving in a circular path of radius  $r$ . What would be the displacement after half a circle.

Q2. What is the unit of the physical quantity which is represented by area under the  $v$ - $t$  graph?

Q3. What does the slope of the velocity –time graph give?

Q4. The numerical ratio of displacement to distance for a moving object is:

- (a) always less than 1
- (b) always equal to 1
- (c) always more than 1
- (d) equal or less than 1

Q5. Displacement is a .....quantity and distance is a .....quantity.

Q6. The displacement of a moving object in a given interval of time is zero. Would the distance travelled by the object also be zero? Justify your answer.

Q7. An ant travels a distance of 8cm from P to Q and then moves a distance of 6cm at right angles to PQ. Find its resultant displacements.

Q8. A motorcyclist drives from A to B with a uniform speed of  $30 \text{ kmh}^{-1}$  and returns back with a speed of  $20 \text{ kmh}^{-1}$ . Find its average speed.

Q9. A racing car has a uniform acceleration of  $4 \text{ ms}^{-2}$ . What is the distance covered in 10s after the start.

Q10. A body moving along a straight line at  $20 \text{ ms}^{-1}$  undergoes an acceleration of  $4 \text{ ms}^{-2}$ . After two second what will be the speed?

Q11. How will the equations of motion for an object moving with a uniform velocity change?

Q12. Write the three equations of motion. Give meaning of each symbol which occurs in them.

Q13. A body starts to slide over a horizontal surface with an initial velocity of  $0.5 \text{ ms}^{-1}$ . Due to friction, its velocity decreases at the rate of  $0.05 \text{ ms}^{-2}$ . How much time will it take for the body to stop?

Q14. A racing car has a uniform acceleration of  $4 \text{ ms}^{-2}$ . What distance will it cover in 10s after the start?

Q15. A train starting from rest moves with a uniform acceleration of  $0.2 \text{ ms}^{-2}$  for 5 mins. Calculate the speed acquired and the distance travelled in this time.

Q16. A ship is moving at a speed of  $56 \text{ kmh}^{-1}$ . One second later, it is moving at  $58 \text{ kmh}^{-1}$ . What is the acceleration?

Q17. A car is moving on a straight road with uniform acceleration. The following table gives the speed of the car at various instants of time:

Speed (m/s) :	5	10	15	20	25	30
Time(s) :	0	10	20	30	40	50

Draw the speed –time graph by choosing a convenient scale. Determine from it:

- (i) The acceleration of the car
- (ii) The distance travelled by the car in 50 sec.

Q18. The following is the “distance-time” table of a moving car:

TIME	DISTANCE
10.05 am	0 km
10:25 am	5 km
10:40 am	12 km
10:50 am	22 km
11:00 am	26 km
11:10 am	28 km
11:25 am	38 km
11:40 am	42 km

- (a) Use a graph paper and plot the distance travelled by the car versus time.
- (b) When was the car travelling at the greatest speed?
- (c) What is the average speed of the car?
- (d) What is the speed between 11:25 am and 11:40 am?
- (e) During a part of the journey, the car was forced to slow down to  $12 \text{ kmh}^{-1}$ . At what distance did this happen?

Q19. The driver of a car travelling at  $52 \text{ kmh}^{-1}$  applies the brakes and decelerates uniformly. The car stops in 5 seconds. Another driver going at  $34 \text{ kmh}^{-1}$  applies his brakes slower and stops after 10 secs. On the same graph paper, plot the speed versus time graph for the two cars. Which of the cars travelled farther after the brakes were applied?

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**ARMY PUBLIC SCHOOL BINNAGURI**  
**SCIENCE PRACTICE SHEET 3, SESSION 2018-19**  
**CLASS: IX**

**TIME: 90 MINUTES**

**Date:**

**MM: 40**

**Duration:** \_\_\_\_\_ **to** \_\_\_\_\_

***Chapter – 1. Matter in our surrounding***

1. What happens when acetone is poured on your hand?
2. How surface area effects evaporation?
3. Define density.
4. Why do gases exert more pressure on the walls of the container than the solid?
5. Describe the continuous motion of particles of matter with the help of an activity.
6. How does evaporation differ from boiling?
7. Comment on the following—
  - A. Evaporation causes cooling.
  - B. Sponge though compressible is a solid.
  - C. Ice is solid at 0° C.
  - D. Rate of evaporation decreases with humidity.
  - E. Sugar crystals dissolve faster in hot water than cool water.
8. Water as ice has a cooling effect, whereas water as steam may cause severe burns. Explain.
9. You want to wear your favourite shirt to a party, but the problem is that it is still wet after a wash. Write some possible steps to dry it faster.
10. Design an experiment to show that ammonium chloride undergoes sublimation.
11. Suggest an activity to show that the rate of diffusion of liquids decreases with increase in density of the liquid.
12. Write four properties of a gas.
13. Which gas is called dry ice? Why?
14. Why do trees acquire more leaves during summer?
15. Give reason – steam causes more burn than boiling water.
16. Why are gases compressible not liquid?
17. Why do we feel comfortable under a fan when we are perspiring?
18. Why do people sprinkle water on the roof after a hot sunny day?
19. Why do doctors advice to put strip of wet cloth on the forehead of a person having high fever?
20. Why are we able to sip hot tea or milk faster from a saucer rather than a cup?
21. Why do solids have a regular geometrical shape?
22. List the changes that take place inside the matter during the change of states.
23. Why do ice floats on water?

## **Chapter – 5 The fundamental unit of life**

1. Plasma membrane is made up of which two components?
2. Cell wall is made up of which two components?
3. What is the intracellular source of digestive enzymes?
4. What are endocytoses?
5. Name two structures found in animal cell not in plant cell.
6. What are the types of plastids?
7. Why are endocytoses found in animal cell only?
8. Which cell organelles controls most of the activities of the cell?
9. What do you mean by plasmodesmata?
10. What are the significance of pores found on the nuclear membrane?
11. Differentiate between bacterial cell and onion peel cell.
12. Differentiate between diffusion and osmosis.
13. Explain ER giving its various classes.
14. Draw a diagram of plant cell / animal cell.
15. What are the various parts of nucleus?
16. Differentiate between plasma membrane and cell wall.
17. What are genes and where are they found? Give its functions.
18. What are the major types of plastids? Describe the structure of green plastids involved in photosynthesis.
19. Diagrammatically explain the structure and function of mitochondria.
20. Why plasma membrane is called a semi permeable membrane? Explain its function taking Amoeba an example.
21. How  $O_2$  and  $CO_2$  enters and leaves RBC?
22. What is digestive bag? Describe its structure and function.
23. Write an activity to show that onion peel has cells.
24. "Osmosis is a special kind of diffusion". Comment.
25. Show the movement of water through the cell membrane of a cell kept in---
  - A. Hypertonic solution.
  - B. Isotonic solution.
  - C. Hypotonic solution

## **CH. – 6 TISSUES**

1. What is the name of the blood cells?
2. Which tissue in plants provide them flexibility?
3. Name the plant tissue having dead tissue.
4. Which tissue forms a barrier to keep different body system separate?
5. What is Goblet cell?
6. What is lignin?
7. Write name of the components of stomata.
8. How are glandular epithelium formed?

9. write a short note on Phellogen.
10. Differentiate bet. Xylem and Phloem.
11. what are involuntary muscles? Where are they found?
12. Name the diff. components of Xylem.
13. If a potted plant is covered with a glass jar, water vapour appears on the wall of glass jar. Why?
14. Why are voluntary muscles are also called skeletal muscle?
15. Write the role of epidermis in plants.
16. What are the different components of blood? Write their function.
17. Differentiate bet. Collenchymas and sclerenchyma.
18. Draw and identify the various elements of phloem.
19. Write down the functions of smooth and striated muscle.
20. List the characters of cork. How are they formed?
21. Write a short note on epidermal tissue. Describe the functions of epidermal tissue.
22. The root tips of a plant were cut and the plant was replanted. What will happen to the plant and why?

**ARMY PUBLIC SCHOOL BINNAGURI**  
**PRACTICE SHEET - 4**  
**BIO-CHEM**  
**CLASS – IX**

**CLASS-IX (BIOLOGY +CHEMISTRY )**

**VSA TYPE QUESTIONS :**

1. What is meant by latent heat?
2. Define sublimation with examples.
3. Why do we see water droplets on the outer surface of the glass containing ice cold water?
4. List two properties that liquids have in common with gases.
5. Explain why temperature remains constant during the changes of state of any substance?
6. What will happen to the melting point temperature of ice if some common salt is added to it?
7. Write the characteristics of particles of matter?
8. A gas can exert pressure on the walls of the container, why?
9. What is meant by density?
10. What is the reason for using dry ice in the ice cream factories 10?

**SA TYPE QUESTIONS:**

1. Define the term :  
(a) Latent heat of fusion (b) Latent heat of vapourisation
2. State the effect of (i) surface area (ii) nature of the liquid on the rate of evaporation.
3. Liquids generally have lower density as compared to solids but you must have observed that ice floats on water. Why?

**LA TYPE QUESTIONS: 5 MARKS TYPE**

1. Compare all three states of matter on the basis of  
(i) density (ii) compressibility (iii) fluidity (iv) rigidity (v) shape.
2. (a) What is Latent heat of evaporation? What are the factors which affect rate of evaporation?  
(b) How does evaporation causes cooling?

**Chapter:5 THE FUNDAMENTAL UNIT OF LIFE**

**VSA TYPE**

1. State the significance of membrane biogenesis?
2. Name the plastids which store starch, oils and protein granules.
3. Why are ribosomes called protein factories ?
4. What are dictyosomes?
5. What is tonoplasm?
6. What is tonoplasm?
7. Is centriole present in plant cell?
8. Where are grana and stroma found in the plant?
9. Name the cell organelle which contain their own genetic material.
10. What is phagocytosis?

**SA(I) TYPE QUESTIONS:**

1. Why are lysosomes known as suicide bags?
2. Why is the plasma membrane called a selectively permeable membrane?
3. Why are ribosomes called protein factories?

4. What would happen if plasma membrane ruptures or break down?
5. Why does your finger skin shrink when you wash clothes for a long time?
6. Why do plant cell possess large size vacuole ?
7. Write down the differences between RER and SER ?
8. Write any two functions of lysosomes.

**SA (II) TYPE QUESTIONS:**

1. Write any three differences between prokaryotic and eukaryotic cell.
2. What would happen to the life of a cell if there was no golgi apparatus?
3. How does an amoeba obtain its food?
4. Do you agree that a cell is a building unit of organism? If yes, explain why?
5. How are chromatin, chromatid and chromosomes related to each other?
6. Draw and label a prokaryotic cell. Mention the function of plasma membrane.

**LAST TYPE QUESTIONS :**

1. Draw and label the parts of a plant cell. Write the functions of any two parts.
2. Draw a well labeled diagram of a eukaryotic cell .How is it different from prokaryotic cell?
3. Draw and label and animal cell. Mention the function of any two organelles.
4. Name the scientist who gave cell theory. What are the main postulates of the cell theory?
5. What is meant by the following solution type:  
(i) Isotonic solutions. (ii) Hypotonic solutions (iii) Hypertonic solutions.

**CHAPTER:6.TISSUES**

**VERY SHORT ANSWER TYPE :**

1. What is the chief function of RBCS and blood platelets?
2. What are the two special types of parenchyma?
3. Name the two conducting tissues in plants.
4. Cilia are present in which type of tissue?
5. Which tissue is present at the lining of the mouth?
6. What is the role of tendon in animals?
7. Name the tissue present in the brain?
8. What do you mean by aerenchyma?
9. Which tissue stores fat globules?

**SA (I )TYPE:**

1. Write two differences between aerenchyma and chlorenchyma ?
2. Write two differences between meristematic and permanent tissue in a tabular form?
3. Do roots of the plant continue growing even after their tips are removed?
4. What is tissues? Give its role in multicellular organisms.
5. What are sclerenchyma. Mention its types.
6. Draw a neat labeled diagram of leaf epidermal peel.

**SA( II )TYPE :**

1. What is xylem ? Name the four elements of xylem and write one function of each.
2. State the functions of parenchyma, collenchyma and sclerenchyma.
3. Write the functions of the following:  
(a) Aerenchyma (b) Neuron (c) Adipose connective tissue
4. (a) Draw a labelled diagram of smooth muscles.  
(b) Differentiate between tendons and ligaments.

(c) Mention the constituents of blood.

5. What is the difference between the structure and function of skeletal smooth and cardiac muscles?

6.(a) Name the epithelial tissues which has hair like projections on the outer surface of cells .

(b) Where are these tissues found in our body and what are their functions?

**LA TYPE QUESTIONS:**

1. Draw a neat labelled diagram of a transverse section of collenchyma tissue and label any four parts.

2. Draw unstrained muscle tissue and mention its occurrence features and function.

3. Differentiate between sclerenchyma and parenchyma. Draw well labeled diagram.

4. Give reasons for:

(a) Meristematic cells have a prominent nucleus and dense cytoplasm but they lack vacuoles.

(b) Intercellular spaces are absent in sclerenchymatous tissue .

(c) We get a crunchy and granular feeling when we chew pear fruit.

(d) Branches of a tree move and bend freely in high wind velocity.

(e) It is difficult to pull a husk of a coconut tree.

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