

# **SARASWATI DEVI INTERNATIONAL SCHOOL**

Summer vacation home work (2026 - 2027)

Carry- 40 marks

## **Part-A (10 marks)**

1. English handwritten from any reference (apart from textbook, newspaper) in 10 pages in English homework copy.
2. Second language handwritten from any reference (apart from textbook, newspaper) in 10 pages in second language homework copy.

## **Part-B (30 marks)**

10 Questions from each subject (a. Mathematics b. Science c. SST) given bellow

[ You need to complete these questions in your subject's classwork copy]

### **Mathematics**

- (1) A point P lies on the x-axis and its distance from the point A(0, 4) is 5 units. Find all possible coordinates of point P.
- (2) A square ABCD has two of its adjacent vertices at A(-3, 2) and B(3, 2). If the entire square lies in the upper half of the Cartesian plane, find the coordinates of the vertices C and D, and the coordinates of the point where its diagonals intersect.
- (3) A rectangle is bounded by the lines  $x = -2$ ,  $x = 4$ ,  $y = -1$ , and  $y = 3$ . A point Q(a, b) lies strictly inside this rectangle. If a and b are integers, how many such points Q exist?
- (4) If  $p(x) = mx + n$  is a linear polynomial such that  $p(p(x)) = 16x - 15$ , find all possible pairs of (m, n).
- (5) The zero of the linear polynomial  $f(x) = ax + b$  is the reciprocal of the zero of the linear polynomial  $g(x) = bx + c$  (where a, b, c, a, b, c not equals to 0). ). Prove that  $b^2 = ac$ .
- (6) A linear polynomial P(x) satisfies the condition  $P(x+2) - P(x) = 6$  for all real values of x. If  $P(1) = 5$ , find the polynomial P(x) and determine its zero.
- (7) A taxi fare is defined by a linear polynomial: a fixed base charge plus a constant charge per kilometer. If a journey of 12 km costs ₹230 and a journey of 20 km costs ₹350, formulate the linear polynomial representing the total fare for x kilometers and find the cost of a 35 km journey.
- (8) Draw the line graph for the equation  $3x - 4y = 12$ . Identify the coordinates where the line intersects the axes, and calculate the area of the triangle bounded by this line and the two coordinate axes.
- (9) The graphs of the linear equations  $2x - y = 4$  and  $x + y = 5$  intersect at a point P. Find the coordinates of P. Also, determine the area of the triangle formed by these two lines and the y-axis.

(10) A moving body travels uniformly. Its distance  $y$  (in meters) and time  $x$  (in seconds) are related by a linear equation. If the initial distance from the origin at  $x=0$  is 5 meters and it reaches 25 meters in 4 seconds, plot the line graph of this motion. From the graph, read the time taken to reach a distance of 40 meters

## Science

### **BIOLOGY**

1. Mung bean seeds are kept in a concentrated solution after soaking in water for 12 hours? What will happen to them?
2. How have technological interventions facilitated the creation of new knowledge in understanding the world beyond the naked eye?
3. Where does a cell come from?
4. How does a cell multiply?

### **PHYSICS**

5. How much distance should we maintain from the truck ahead to avoid a collision if it suddenly applies the brakes?
6. Does this distance depend upon the speed with which we are moving?
7. My father went to a shop from home which is located at a distance of 250 m on a straight road. On reaching there, he discovered that he forgot to carry a cloth bag. He came home to take it, went to the shop again, bought provisions and came back home. How much was the total distance travelled by him? What was his displacement from home?

### **CHEMISTRY**

8. Which of the following are matter? Chair, air, love, smell, hate, almonds, thought, cold, cold- drink, smell of perfume.
9. Give reasons for the following observation: The smell of hot sizzling food reaches you several metres away, but to get the smell from cold food you have to go close.
10. A diver is able to cut through water in a swimming pool. Which property of matter does this observation show?

## Social science

1. What is Periodisation ? Briefly explain the Periodisation of History.
2. Write the names of Humari ancestors.
3. Write about Harappan civilization.
4. Write the features of Neolithic period.
5. With a proper Diagram explain the formation of Himalaya .

Project - Map Work

**Point out the following**

Northern most latitude, Gulf of Khambat, Indira point , Standard Meridian, Eastern most longitude

Palk strait, Gulf of Mannar Sulaman range , Aravalli mountain, Western Ghats, Coastal areas of India, Vindhya mountain, Satpura mountain, Anai Mudi , Purbachal.

\*\* Students are instructed to do this work in Practical Copy.