

# HOLIDAY'S HOMEWORK



## CLASS 9

"THE HOLIDAY SEASON  
IS A PERFECT TIME  
TO REFLECT ON OUR BLESSINGS  
AND SEEK OUT WAYS TO  
MAKE LIFE BETTER  
FOR THOSE AROUND US."

## **SOCIAL SCIENCE**

A detail study on census 2011 showing demographic trends. Also include the observation on how the quality of population can be improved.

Individual activity-

Student 1: Sex Ratio

Student 2: Literacy Rates

Student 3: Occupational Structure

Student 4: Population Growth

Student 5: Age Composition

Student 6: Health Status

Student 7: Religious Composition

Student 8: Poverty Trends

Repetition of the topics would be done for the roll nos that come there after.

## **ENGLISH**

Q1 Write one article for the School's Annual magazine (Any one)

- Article Writing (Scientific, factual, descriptive and literary)
- Story telling
- Self composed poem

Q2. Conduct a survey of the environment around you. What are the things which you feel are harmful for the environment. Prepare a pamphlet on "Save mother earth". You can highlight the extent to which we humans are destroying the environment on a daily basis and create awareness among people towards their environment.

Q3. Read the newspaper regularly and find 5 new words everyday write the meaning of the words along with antonym and synonym.

Q4. Read about five eminent musicians of India and prepare a project on them. Your project should contain:

- i. Name and photograph of the musician and the instrument which he plays
- ii. His/her struggle to become a renowned musician

iii. Achievements and accolades at national and international level.

Q5. Read the lines given below and continue the story. Give it a logical conclusion in about 150-200 words.

The old man looked tired and helpless. He seemed to be grumpy and didn't want anyone's help.....



## MATHS

### ➤ Spot the gold –

**Instruction(s):** Ahmed, a merchant, is travelling through a desert when he comes across a strange- cave. He finds an equation written on the entrance of the cave:  $6x + 3y = 72$

When he enters the cave, he finds several jars lying around. Some of the jars contain gold, while some contain poisonous snakes. To identify the jars containing gold, Ahmed must choose the jars which have solutions to the equation that he had seen at the entrance to the cave.

Can you help Ahmed spot the gold? Mark the jars that carry the solutions to the equation.



➤ Use of linear equations in two variables in real-life -

**1** Cell Phone Calling Plan

The monthly rental of a cell phone calling plan is ₹ 300 and the usage cost per minute is ₹ 1. Express the monthly cost of the calling plan in the form of linear equation in two variables. Assume the monthly cost to be 'c' and the minutes of usage per month to be 'm'.

Linear equation in two variables in the form  
 $ax + by + c = 0$

**2** Converting Dollars to Rupees

Your uncle has arrived from America and wants to convert his dollars to rupees. He wants you to write a linear equation in two variables that would help him convert his dollars to rupees. Assume that \$1 is equivalent to ₹ 45. Let the variable 'r' represent rupees and the variable 'd' represent dollars.

Linear equation in two variables in the form  
 $ax + by + c = 0$

**3** Distance and Time

You are travelling in a car at an average speed of 50 km/hr. Write a linear equation in two variables to find out the distance you have travelled after a certain number of hours. Use 'd' for distance travelled and use 'h' for hours.

Linear equation in two variables in the form  
 $ax + by + c = 0$

➤ APPLICATIONS OF HERON'S FORMULA

**Q 1** A field is in the shape of a quadrilateral. If its four vertices are labelled P, Q, R and S and  $PQ = 7$  m,  $QR = 6$  m,  $RS = 12$  m,  $PS = 15$  m and  $PR = 9$  m, then calculate its area. The diagonal divides the field PQRS into two triangles PQR and RSP.

**Q 2** The perimeter of a triangle is 450 m and its sides are in the ratio 13:12:5. Find the area of the triangle.

**Q 3** An amusement park has a triangular structure above its entrance. What would be the cost of tiling it at the rate of ₹ 750/m<sup>2</sup>, if its sides measure 9 m, 9 m and 12 m ?

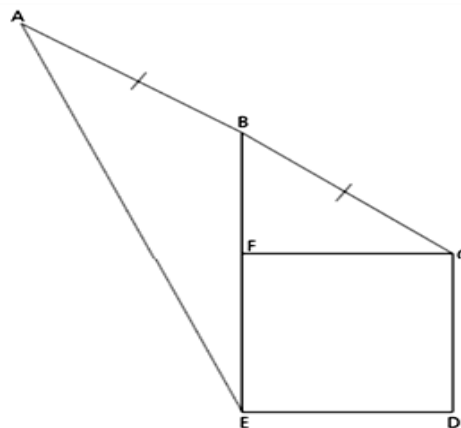


**Q 4** A rhombus has an edge of 6 cm and one diagonal measures 8 cm. Find the area of the rhombus.

**Q 5** A triangular plot of land has sides 48 m, 55 m and 73 m. Find the area of the plot and the altitude to the side 55 m long. What is the shape of the plot of land ?

**Q 1** What would be the sides of an equilateral triangle that has the same area as a triangle with sides 6 cm, 8 cm and 10 cm ?

**Q 2** In this figure, CDEF is a square,  $EF = 4.8$  cm,  $BE = 8.4$  cm,  $AB = BC$  and  $AE = 12.7$  cm. Find the area of the entire figure.



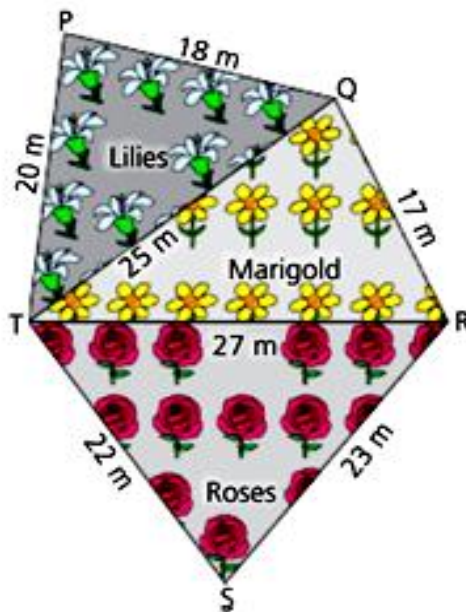
**Q 3**

Find the area of Sukhram's field. How much area is to be utilised as poultry farm if portion I of the field is to be used for growing vegetables and portion II for the poultry farm ?



**Q 4**

A pentagonal field is divided into three triangles as shown in the figure for growing roses, lilies and marigolds.

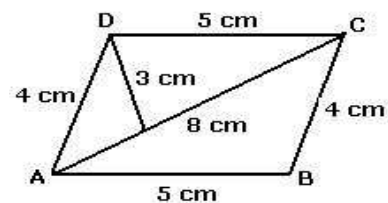


- a** Find the area reserved to grow each of the flowers.
- b** Find the amount of manure required to grow each of the flowers if 1.5 kg of manure is required for 1 square metre of the field.

### TEST ME IN MATHEMATICS

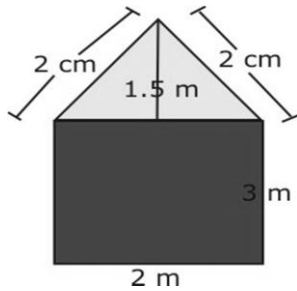
1. Without adding, find the sum.  $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23$   
a. 81                      b. 100                      c. 121                      d. 144

2.  $36^2$  would have digit \_\_\_\_\_ at unit place.
3. Find the smallest square number that is divisible by each of the numbers 8, 15 and 20.
- 4.
5. If 60% people in a city like cricket, 30% like football and the remaining like other games, then what per cent of the people like other games? If the total number of people are 50 lakh, find the exact number who like each type of game.
- If  $x + \frac{1}{x} = 6$ , find  $x^2 + \frac{1}{x^2}$ .
6. Find the ratio of 50 paise to Rs 5.
7. Simplify:  $(1.5x - 4y)(1.5x + 4y + 3) - 4.5x + 12y$
8. Which of the following is an expression?  
 a.  $9ab + 7$                       b. 7                      c.  $\frac{1}{4}$                       d. 9
9. Show that  $(a - b)(a + b) + (b - c)(b + c) + (c - a)(c + a) = 0$ .
10. Simplify  $(xy + yz)^2 - 2x^2y^2z$ . Find the value when  $x = -1$ ,  $y = 1$  and  $z = 2$ .
11. The area of a square is given by the formula  $A = c^2$ . What will be the total area of 5 such similar squares, if the side of a square is 7 in?
12. Find the value of  $m$  for which  $5^m \div 5^{-3} = 5^5$ .
13. Find the value of  $\left[\left(\frac{-2}{3}\right)^{-2}\right]^3$
14. A group of students were given an assignment to collect different types of leaves. The group collected 243 types of leaves. Represent the number of leaves collected in the form of exponential expression with its base being indivisible. The diameter of garden roller is 1.4 m and it is 2 m long. How much area will it cover in 5 revolutions?
15. Find the area of a parallelogram whose measurements are given in the following figure.
16. How many bricks will be required for a wall which is 8 m long, 6m high and 22.5 cm thick, if each brick measures 25 cm  $\times$  11.25 cm  $\times$  6 cm?
17. The equations are linear, i.e., the highest power of the



variable appearing in the equation is \_\_\_\_\_.

18. Find the area and perimeter of the dollhouse.



19. Solve:

20. The present age of Sahil's mother is three times the present age of Sahil. After 5 years their ages will add to 66 years. Find their present ages.

21. Factorise the following expressions:

a.  $q^2 - 10q + 21$

b.  $p^2 + 6p - 16$

22. Divide  $2y + \frac{5}{3} = \frac{26}{3} - y$  as directed:

a.  $4yz$   $(z^2 + 6z - 16) \div 2y(z + 8)$

b.  $5pq(p^2 - q^2) \div 2p(p + q)$

23. Find and correct the errors in the following mathematical statements.

Substituting  $x = -3$  in

a.  $x^2 + 5x + 4$  gives  $(-3)^2 + 5(-3) + 4 = 9 + 2 + 4 = 15$

b.  $x^2 - 5x + 4$  gives  $(-3)^2 - 5(-3) + 4 = 9 - 15 + 4 = -2$

- **Do all the assignments of ch - 4 from the assignment booklet in assignment register.**
- **Project Work : Prepare a Mathematical Puzzle or Mathematical Game.**



## SCIENCE

1. To make a 3 D model on the given topics:

Roll no	Model	Roll No	Model	Roll no	Model	Roll no	Models	Roll no	Model
1	Meristematic tissue	9	Columnar epithelium	17	Areolar tissue	25	Animal cell	33	Phloem
2	Parenchyma	10	Squamous epithelium	18	Tendon	26	Mitochondria	34	Animal cell
3	Collenchyma	11	Stratified epithelium	19	Ligament	27	Endoplasmic reticulum	35	Epidermal tissue
4	Sclerenchyma	12	Striated muscle	20	Neuron	28	States of matter	36	Cardiac tissue
5	Xylem	13	Non striated muscle	21	Ciliated epithelium	29	Chromosome and DNA	37	Neuron
6	Phloem	14	Cardiac muscle	22	Glandular epithelium	30	Golgi Apparatus	38	Striated muscle
7	Cork	15	Bone	23	Cartilage	31	States of matter	39	Non striated muscle
8	Epidermal tissue	16	Adipose tissue	24	Plant cell	32	Xylem	40	Stomata

### Instructions

- . Students can use house hold materials like cloth, wood, food items, materials available at home, cardboards, colours etc. and explain its function.( Note-use of thermocol is restricted ,use of biodegradable material is appreciated)
- Size should be of minimum 30cmx20cm.

## BIOLOGY

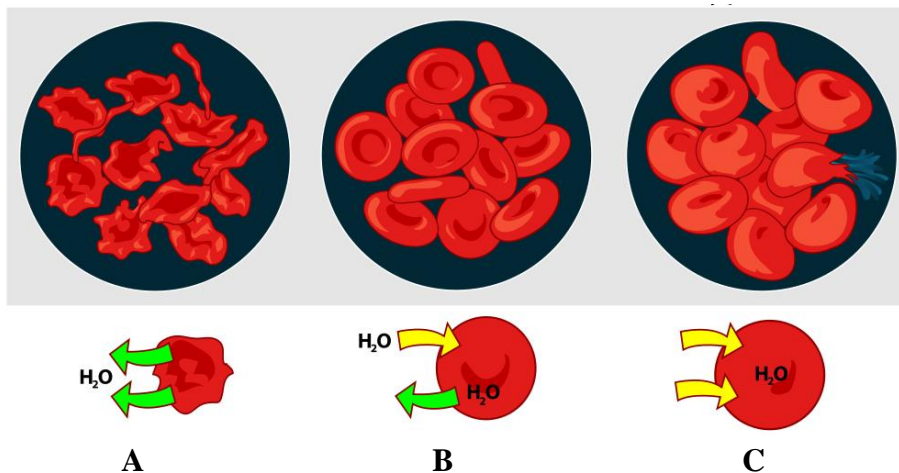
1. Write true if the statement is true or false if the statement is false.

- \_\_\_\_\_ 1. Amoeba acquires its food through the process termed endocytosis.
- \_\_\_\_\_ 2. Parenchyma is a type of complex tissue.
- \_\_\_\_\_ 3. The only organelle seen in prokaryotic cell is mitochondria.
- \_\_\_\_\_ 4. Chromosomes are made up of DNA and proteins.
- \_\_\_\_\_ 5. The cell organelles involved in forming complex sugars from simple sugars are ribosomes.
- \_\_\_\_\_ 6. Lipids are synthesized by smooth endoplasmic reticulum.
- \_\_\_\_\_ 7. Nucleoid is present inside the nucleoplasm of eukaryotic nucleus.
- \_\_\_\_\_ 8. Aerenchyma is modified parenchyma and occurs in aquatic plants..
- \_\_\_\_\_ 9. The husk of coconut is made up of sclerenchyma.
- \_\_\_\_\_ 10. Cells of cork are dead, suberised and compactly arranged.
- \_\_\_\_\_ 11. Lateral meristem is responsible for the length of the plant.
- \_\_\_\_\_ 12. Collenchymal cells are deposited with lignin, while sclerenchymal cells are deposited with pectin..
- \_\_\_\_\_ 13. Sieve tubes are found in xylem, while vessels are found in phloem..
- \_\_\_\_\_ 14. Cell arises by pre-existing cells was stated by Hooke.
- \_\_\_\_\_ 15. Vacuoles are present in meristematic plant cells.

2. Fill in the blank with the appropriate term.

1. \_\_\_\_\_ gives flexibility in plants.
2. Entry of water into cells placed in a hypotonic solution is called\_\_\_\_\_.
3. A thick waterproof coating of \_\_\_\_\_ occurs over the epidermis in desert plants.
4. \_\_\_\_\_ consists of loosely packed cells with thin cell walls.
5. \_\_\_\_\_ have guard cells.
6. The epidermis makes up the \_\_\_\_\_.
7. \_\_\_\_\_ plays a crucial role in detoxifying many poisons and drugs in a cell.
8. Phloem transports \_\_\_\_\_ from \_\_\_\_\_ to other parts of the plant.
9. \_\_\_\_\_ have tubular cells with perforated walls and are living in nature.
10. The \_\_\_\_\_ provides support for individual plant cells and for the entire plant.
11. \_\_\_\_\_ helps support the plant and provides wind-resistance; its cells have irregularly thickened cell walls.
12. The cells of cork contains chemical called \_\_\_\_\_

3. Identify the solutions A,B and C from the figure.



#### 4. CHOOSE THE CORRECT OPTION

1. Which of the following is not related to endoplasmic reticulum?

- a) It behaves as a transport channel for proteins between nucleus and cytoplasm.
- b) It transports materials between various regions in cytoplasm.
- c) It can be a site of energy generation.
- d) It can be a site for some biochemical activities in the cell.

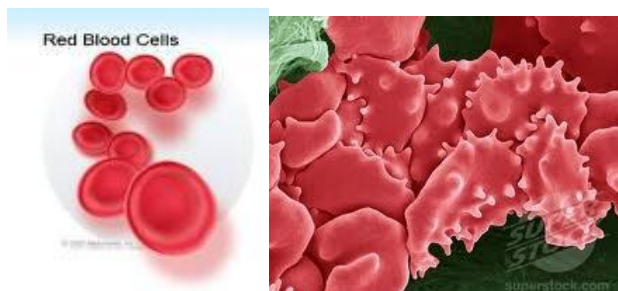
2. Plasmolysis in a plant cell is defined as

- a) break down of plasma membrane in hypotonic solution.
- b) shrinkage of cytoplasm in hypertonic medium.
- c) shrinkage of nucleoplasm.
- d) none of them

3. Select the odd one out.

- a) The movement of water across a semi permeable membrane is affected by the amount of substances dissolved in it.
- b) Membranes are made of organic molecules like proteins and lipids.
- c) Molecules soluble in organic solvents can easily pass through the membrane.
- d) Plasma membranes contains chitin sugar in plants.

5. Pictures A and B both show red blood cells.



A

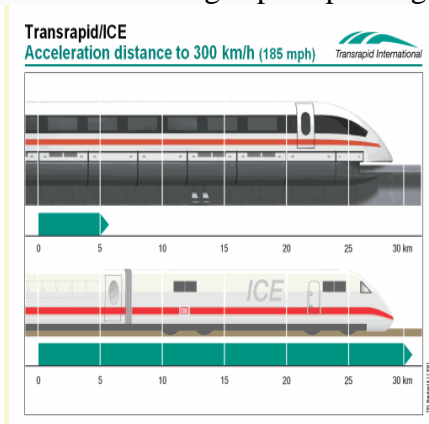
B

Given the red blood cells in Picture A was obtained from an isotonic solution, what can you deduce about the solution from which red blood cells in Picture B is obtained?

- (i) How would you describe the appearance of the red blood cells in Picture B?
- (ii) Predict and explain what will happen to red blood cells from Picture A if it was placed in pure water.

## PHYSICS

Q1. The following paragraph compares the performance of a magnetically levitated train (the Transrapid) to a conventional high speed passenger train (the ICE).

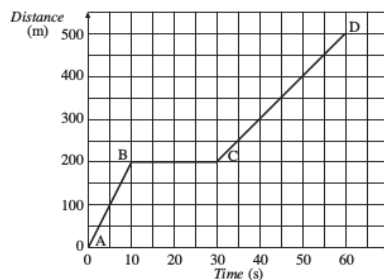


The Trans rapid is not only fast, but it can also accelerate quickly to high speeds 300 km/h (185 mph) can be reached after a distance of only 5 km (3 miles).

Modern high-speed trains require more than 28 km (18 miles) and at least four times as long to reach the same speed.

How does the acceleration of the Transrapid compare to the acceleration of the ICE?

- Q2. Draw a velocity-time graph of a stone thrown vertically upwards and then coming downwards after attaining a maximum height.
- Q3. The graph below shows the positions of a body at different times. Calculate the speed of the body as it moves from
  - (i) A to B    (ii) B to C    (iii) C to D



Q4. We give you an example of the cross- country race event for two runners.

Cross-country- Spitz, Sabine Germany			Cross-country Absalon, Julien ,France		
Distance (km)	Time(h:m:s)	Time( in s)	Distance (km)	Time(h:m:s)	Time( in s)
2.2	0:08:17		2.2	0:07:01	
4.5	0: 16:51		4.5	0:14:23	
6.7	0:25:19		6.7	0:21:25	
8.9	0:33:50		8.9	0:28:15	
11.1	0:42:28		11.1	0:35:17	
13.4	0:51:11		13.4	0:42:21	
15.6	0:59:58		15.6	0:49:35	
17.8	1:08:46		17.8	0:56:41	
20.0	1:17:41		20.0	1:03:51	
22.3	1:26:46		22.3	1:11:04	
24.5	1:35:51		24.5	1:18:22	

Read the above data carefully and plot it on graph sheet.

- Choose an appropriate scale for the above data.
  - Approximate by rounding off the time data to the nearest – hundred.( in seconds).
1. Interpret the nature of motion of the athletes from the graph.
  2. Who will win the race? Do the calculations using the graph plotted by you.
  3. Comment on the acceleration of two athletes.

Q 5.Do Assignment questions: Chapter : Motion: Qn No: 7 to Qn.No 19 in Physics register.

## CHEMISTRY

- Q1. It is a hot summer day, Priyanshi and Ali are wearing cotton and nylon clothes respectively. Who do you think would be more comfortable and why?
- Q2. You want to wear your favorite dress to a party, but the problem is that it is still wet after a wash. What steps will you take to dry it faster?
- Q3. Osmosis is a special kind of diffusion in which the solvent molecules migrate from solvent to the solution side through a semipermeable membrane. Classify the following into osmosis/diffusion:
  - a.) Swelling up of a raisin on keeping in water.
  - b.) Spreading of virus on sneezing.
  - c.) Earthworm dying on coming in contact with common salt.
  - d.) Shrinking of grapes kept in thick sugar syrup.
  - e.) Preserving pickles in salt.
  - f.) Spreading of smell of cake being baked throughout the house.
  - g.) Aquatic animals using oxygen dissolved in water during respiration.
- Q4. Alka was making tea in a kettle. Suddenly she felt intense heat from the puff of steam gushing out of the spout of the kettle. She wondered whether the temperature of the steam was higher than that of the water boiling in the kettle. Comment.
- Q5. Why do we feel numbness, if we hold a few cubes of ice in our hand for more than 2 minutes?

- Q6. The boiling point of water is much higher than that of petroleum ether. In which of the two the intermolecular forces are strong?
- Q7. Why is low pressure necessary for the formation of clouds in the rainy season?

## HINDI

निर्देश :-

- 1) संपूर्ण कार्य ए- A शीट पर कीजिए एवं एक फाइल में संकलित कीजिए।
- 2) लेख की सुंदरता का विशेष ध्यान रखा जाए।

कार्य :-

- 1) 'गंगा-यमुना की सफाई' अभियान से संबंधित जानकारी एकत्रित करके एक परियोजना कार्य तैयार कीजिए।
- 2) सात दिनों के हिंदी समाचार-पत्रों को पढ़कर निम्नलिखित कार्य कीजिए -  
क) अनुस्वार, अनुनासिक, अर्धचंद्राकार व मुक्ता युक्त 15-15 शब्द छँटकर लिखिए।  
ख) 15 शब्द छँटकर उनका कर्ण-विच्छेद कीजिए।
- 3) मुंशी प्रेमचंद की कोई पाँच कहानियाँ पढ़िए। पाँचों कहानियों के नाम लिखिए तथा किसी एक कहानी का सारांश चित्र सहित लिखिए।
- 4) भारत तथा पाकिस्तान के मध्य दो क्रिकेट मैचों की जानकारी चित्र सहित प्राप्त करके उसे फाइल में चिपकाएँ।
- 5) जल की समस्या पर आधारित दो पड़ोसियों का परस्पर वार्तालाप लिखिए।
- 6) निम्नांकित शब्दों का प्रयोग करते हुए एक कविता लिखें।

त्याग, प्रेरणा, बलिदान, स्वाभिमान, दया, करुणा, सफलता, धैर्य  
आत्मविश्वास, संसार, धरा, अंबर।

## COMPUTERS

### Project(Hard Copy)

1. Design a Mark sheet to calculate total and percentage of a student.
2. Design a form to calculate area and perimeter of a rectangle.