HOLIDAY HOMEWORK (2019-20)

Class IX

- ## ENGLISH:

- Workbook: Do the exercises of Unit 1, 2 and 3.

- ## MATHEMATICS:

Q1. Find five rational numbers between $\frac{2}{3}$ and $\frac{-8}{4}$

Q2. Locate $\sqrt{3}$ and $\sqrt{5}$ on the number line.

Q3. Visualize the representation of $5.\overline{43}$ on the number line up to 3 decimal places.

Q4. Rationalize the denominator of the following-

(i) $\frac{8}{\sqrt{5}+\sqrt{4}}$　　　(ii) $\frac{3}{5\sqrt{6}}$　　　(iii) $\frac{1}{5+3\sqrt{6}}$

Q5. Find (i) $7^{1/3} \times 7^{1/5}$　　　(ii) $64^{-4/6}$

Q6. Simplify- (i) $4^{2/3} \times 4^{1/3}$　　　(ii) $8^{5/3} \div 8^{8/3}$

Q7. Find zeros of the polynomial in each of the following cases. (i) $P(x) = 2x-3$　(ii) $P(x) = 5x+4$

Q8. Divide the polynomial $2x^4 - 4x^3 - 3x - 1$ by x-1.

Q9. Find the remainder obtained on dividing $P(x) = x^3 + 1$ by x+1

Q10. Explain the following- (i) $(4a+2b-3c)^2$　　(ii) $(x-4y-2z)^2$

Q11. Write the Cubes in expanded form---

(i) $(3a-5b)^3$　　　(ii) $(5x+4y)^3$

Q12. Factories-- (i) $2y^3+y^2-y-1$

Q13. Find the value of K, if x-1 is a factor of $P(x) = 2x^2 + Kx + \sqrt{2}$

Q14. Use the factor theorem to determine whether g(x) is a factor of P(x) in each of the following cases.

(i) $P(x) = x^3-4x^2+x+6$, $g(x) = x-2$

(ii) $P(x) = 2x^3+x^2-2x-1$, $g(x) = x+3$

Q 15. Prepare the summary of all chapters of April & May syllabus like, properties formula, characteristics.

Q 16. What is a Polynomial?

　　I.　Define it in the terms like monomial, binomial etc.

　　II.　What is degree?

　　III.　Define the polynomial according to degree like linear, quadratic etc.

　　IV.　Zeroes of the polynomial.

　　V.　Factorization of a polynomial with examples.

　　VI.　What is remainder theorem?

- ## HINDI:

- किन्ही पाँच साहित्यकारों/कवियों का जीवन परिचय, भाषाशैली व रचनाओं के नाम लिखिए तथा चित्र भी बनाइए अपनी उत्तर पुस्तिका में।
- हिन्दी समाचार नियमित रूप से पढ़िए तथा शिक्षा से सम्बन्धित समाचार एकत्र करके Notebook पर पाँच कोलॉज तैयार कीजिए।

- ## SCIENCE:

- ## PHYSICS:

Q1. Convert each of the following speed into m/sec: **(HINT: Multiply by 5/18)**
   a) 72 km/hr   b) 12.6 km/hr   c) 23.4 km/hr   d) 306 km/hr.
Q2. Convert each of the following speed into km/hr: **(HINT: Multiply by 18/5)**
   a) 45 m/sec   b) 4 m/sec   c) 1.5 m/sec   d) 2.8 m/sec
Q3. Is the uniform circular motion accelerated? Give reasons for your answer
Q4. What is the difference between uniform linear motion and uniform circular motion? Explain with examples.
Q5. Find the initial velocity of a car which is stopped in 10 seconds by applying brakes. The retardation due to brakes is 2.5 m/s^2.
Q6. Describe the motion of a body which is accelerating at a constant rate of 10 ms^{-2}. If the body starts from rest how much distance will it cover in 2 s?
Q7. A motorcycle moving with a speed of 5 m/s is subjected to an acceleration of 0.2 m/s^2. Calculate the speed of the motorcycle after 10 seconds, and the distance travelled by it in this time
Q8. A bus running at a speed of 18 km/h is stopped in 2.5 seconds by applying brakes, Calculate the retardation produced.
Q9. A train starting from rest moves with a uniform acceleration of 0.2 m/s^2 for 5 minutes. Calculate the speed acquired and the distance travelled in this time.
Q10. Name the two quantities, the slope of whose graph gives:
   (a) Speed, and
   (b) Acceleration
Q11. A cheetah starts from rest, and accelerates at 2 m/s^2 for 10 seconds. Calculate:
   (a) The final velocity
   (b) The distance travelled.
Q12. A cyclist is travelling at 15 m/s. She applies brakes so that she does not collide with a wall 18 m away. What deceleration must she have?
Q13. The velocity time graph for part of a train journey is a horizontal straight line. What does this tell you about (a) the train's velocity, and (b) about its acceleration?
Q14. Name the quantity which is measured by the area occupied under the velocity-time graph.
   (a) What does the slope of a speed-time graph indicate?
   (b) What does the slope of a distance-time graph indicate?
   (c) Name the type of motion in which a body has a constant speed but not constant velocity.
Q15. An ant travels a distance of 8 cm from P to Q and then moves a distance of 6 cm at right angles to PQ. Find its resultant displacement.

Questions Based on High Order Thinking Skills (HOTS)
Q1. A body is moving along a circular path of radius R. What will be the distance and displacement of the body when it completes half a revolution?
Q2. If on a round trip you travel 6 km and then arrive back home:
   (a) What distance have you travelled?
   (b) What is your final displacement?

Q3. A body travels a distance of 3 km towards East, then 4 km towards North and finally 9 km towards East.
   (a) What is the total distance travelled?
   (b) What is the resultant displacement?
Q4. A boy walks from his classroom to the bookshop along a straight corridor towards North. He covers a distance of 20 m in 25 seconds to reach the bookshop. After buying a book, he travels the same distance in the same time to return to the classroom. Find (a) average speed, and (b) average velocity of the boy.
Q5. A ball hits a wall horizontally at 6.0 m/s. It rebounds horizontally at 4.4 m/s. The ball is in contact with the wall for 0.040 s. What is the acceleration of the ball?

- **BIOLOGY**

1. Consider a cell like your school. Each part of the cell (school) has responsibilities that must be done and certain organelles (people) to do them. Identify the functions of the following parts of the cell then identify which person does the same job.
   First one is done as an example to follow:

S. No.	ORGANELLE	FUNCTION	Part of School that has a similar function
1.	Cell Membrane	Controls what goes in and out of the cell	Front office
2.	Mitochondria		
3.	Nucleus		
4.	Ribosome		
5.	Cytoplasm		
6.	Golgi Body		
7.	Cell Wall (only in plant cell)		

2. Do Activity 6.1 (Science N.C.E.R.T.) Chapter 6 – Tissues and record the observations in the table.

- **URDU:**

۱- مندرجہ ذیل عنوانات میں سے کوئی سے بھی تین عنوانات پر 250 سے 300 الفاظ پر مشتمل مضمون لکھیے۔

قوی یا مذہبی تہوار، سڑک کے حالات، پسندیدہ شخصیت، میرے والدین، یوم اساتذہ

۲- اپنی درسی کتاب میں موجود مصنف و شعراء میں سے کسی دو کے حالات زندگی، طرزِ تحریر اور کتابوں کے حوالے کے ساتھ 100 سے 150 الفاظ پر مشتمل مضمون لکھیے۔

- **SOCIAL SCIENCE:**

o **HISTORY:**

- The French Revolution saw the rise of newspapers describing the events of each day and week. Collect information and pictures on any one current event and write a newspaper article on it.

o **GEOGRAPHY:**

- On an outline map of India (political), find and mark the latitudes and longitudes of the cities given below:
  1. Dehradun.
  2. Chennai.
  3. Delhi.
  4. Kolkata.
  5. Mumbai.
  6. Patna.

o **ECOMOMICS:**

- Make a collage or a poster on the plight of Indian farmers.