

Dear Students

Some suggestions that will help you to get par with the board exams are undermentioned :-

1. Revise the syllabus covered in the class
2. Practice or solve the CBSE Board questions of the covered chapters in the month of April and May.
3. Practice writing a composition daily (article, letter, short story)
4. Solve maximum no. of questions from the reference books of the covered chapters in the class
5. Improve your handwriting by practicing daily.
6. Ensure a time limit (maximum 1 hour) for watching TV/playing computer games/ social media

### GENERAL INSTRUCTIONS

1. Holidays homework must be done in the respective subject notebook, and submit it to your class teacher on July 8, 2019. The work should be done in a very neat and presentable manner.
2. Questions must be done in the given sequence.
3. Mention date and day before starting day's work

We hope these suggestions will help our students to spend their vacation in an interesting manner.

***"May you be in the best of health & spirit when you come back in July."***



Dear Students

*The most awaited vacations of the year are around the corner. It is a wonderful time to relax, but at the same time we should keep in mind that X is a crucial board class and hence requires extra endeavors to be put in by the students. The holidays should not only be treated as a time for enjoyment but during this time the regularity in studies should also be maintained and the aim of it is to perform best and score high in board exams.*

**Note:-** *As per the latest CBSE guidelines, the board is emphasizing on creative long answers and discouraging rote learning. Hence it is suggested to the students to read the chapters of all the subjects thoroughly and practice writing long answers in your own words.*





# JVP INTERNATIONAL SCHOOL

## Summer Holidays Homework

### Class -X

#### Subject- Hindi

Read Ch-1 (हरिहर काका)

Q. Write and Explain these topics:-

कथावाचक और हरिहर काका का सम्बन्ध , काका के प्रति कथाकार की चिंता, ठाकुरबारी का इतिहास , ठाकुरबारी का महत्व, ठाकुरबारी के प्रति कथाकार का नजरिया, हरिहर काका का परिवार, हरिहर काका की मुसीबत, काका का मोहबंग, हरिहर काका और ठाकुरबारी के महंत, महंत द्वारा काका की खातिरदारी और प्रलोभन , हरिहर के भाइयों की चिंता, काका की घर - वापसी और सेवा - सत्कार, गांव वालों की जिज्ञासा, महंत द्वारा काका का अपहरण , हरिहर काका का नजरिया बदला, जायदाद के लिए अपने ही दुश्मन, हर तरफ हरिहर काका की चर्चा, हरिहर काका का मौन

2. कक्षा के प्रतिनिधि के नाते गणित विषय को बेहतर करने के लिए कक्षा की तरफ से गणित विषय के लिए अतिरिक्त कक्षाओं की व्यवस्था के लिए प्रधानचार्य को पत्र लिखिए।

3. विद्युत विभाग को पत्र लिखकर बार -बार बिजली चले जाने की शिकायत कीजिये।

#### Subject -S.ST.

1. Make notes for Eco Chapter 1 and DP chapter 1

2. Make mind maps for the following chapters:

Geography-Chapter-1,2

Democratic Politics-Chapter-1

Economic-Chapter-1

#### Subject - Science

Physics

All questions from Back exercises given in 12th chapter.

Chemistry

Write five examples of each and every type of reaction.

Biology

Draw diagram of heart, alimentary canal and nephron in Notebook.

Q.1. What is double circulation ? What is the use of double circulation in human beings?

Q.2. Write all the enzymes and their functions in Digestive System.

#### Subject - English

Read the chapter thoroughly and answer all the following questions as per your understanding of the chapter and frame the answer in your own language, this will improve your formation of sentences , vocabulary and spellings.

**Q1. Answer the following questions in brief:-**

1. Lencho has a great faith in God. Does he have the same kind of faith in man? Taking examples from the story describe his attitude towards God and man.
2. How did the Postmaster react when postman showed him the letter to God?
3. What according to Mandela, is 'true freedom'?
4. How does Mandela define courage and from where did he learn the meaning of courage?
5. Why didn't the young seagull take the plunge? What stopped him from doing so?
6. What is the message that Liam O'Flaherty wants to give to the readers through the lesson 'His First Flight'?
7. Why did the narrator want to meet the woman in control room? Did he get any information about the mysterious disappearance of the black aeroplane and its pilot?
8. The narrator had two options before risking himself entering the storm clouds? Why didn't he choose them?
9. Why does Anne say: "Paper has more patience than people"?
10. Why was the entire class quaking in it's boots?

**Q2. Answer the following questions in detail:-**

1. Why did the Postmaster and his employees decide to help Lencho? Was their effort appreciated by the receiver of that help?
2. Define the contribution of Nelson Mandela in the struggle of independence of the blacks of his country against the hated apartheid regime.
3. 'Maddened by hunger, he dived at the fish,' says the narrator about the young seagull. Do you feel hunger was the main motivating force that made the young seagull take the plunge that taught him how to fly in the air?
4. Describe the appearance of the strange black aeroplane in the most hopeless situation. How did the pilot of the black aeroplane help the narrator to come out of the storm clouds and land safely?
5. Give a brief character sketch of Mr Keesing highlighting the transformation that comes in him in the end.

## **Subject- Maths**

1. Do given worksheet of Ch- 1,2,4

# 1. REAL NUMBERS

1. Is  $\sqrt{3}$  an irrational number?
2. Write the value of  $\text{HCF}(p, q) \times \text{LCM}(p, q)$ .
3. Write 42 as product of its prime factors.
4. What is  $\sqrt{p}$ , if  $p$  is a positive prime integer?
5. Write the value of .737373...?
6. Is  $\frac{129}{2^2 \times 5^3 \times 7^4}$  a terminating or non-terminating decimal expansion?
7. What is the HCF of 26 and 65?
8. Can two numbers have 18 as their HCF and 380 as their LCM? Give reasons.
9. Using Euclid's division algorithm, find the HCF of 210 and 55.
10. Express 5005 as a product of its prime factors.
11. Find the LCM of 6, 72 and 120, using the prime factorisation method.
12. Express  $0.\overline{24}$  as a fraction in the simplest form:
13. Find the HCF of  $(x^2 - 4x + 3)$  and  $(x^2 - 3x + 2)$ .
14. Find the LCM of  $x^4 - 16$  and  $x^2 - 4$ .
15. Given that  $\text{LCM}(26, 169) = 338$ , find  $\text{HCF}(26, 169)$ .
16. State whether  $7.2\overline{3} + \frac{4}{5}$  is a rational number or not.
17. Prove that  $3\sqrt{2}$  is irrational.
18. Show that  $\frac{1}{\sqrt{2}}$  is irrational.
19. Prove that  $6 + \sqrt{2}$  is an irrational number.
20. Show that the square of any odd integer is of the form  $4m + 1$ , for some integer  $m$ .
21. Using Euclid's division algorithm, find the HCF of 441, 567 and 693.
22. Show that  $12^n$  cannot end with the digit 0 or 5 for any natural number  $n$ .
23. On a morning walk, three persons step off together and their steps measure 40 cm, 42 cm and 45 cm, respectively. What is the minimum distance each should walk, so that each can cover the same distance in complete steps?
24. Prove that  $\sqrt{p} + \sqrt{q}$  is irrational, where  $p$  and  $q$  are primes.
25. Show that one and only one out of  $x$ ,  $x + 2$ , or  $x + 4$  is divisible by 3, where  $x$  is any positive integer.
26. Prove that the product of three consecutive positive integers is divisible by 6.
27. If ' $a$ ' is rational and  $\sqrt{b}$  is irrational, then prove that  $(a + \sqrt{b})$  is irrational.
28. Prove that for any prime positive integer  $p$ ,  $\sqrt{p}$  is an irrational number.
29. Write each of the following in the form  $\frac{p}{q}$  in the simplest form and write the prime factors of  $q$  in each case:
  - (i) 0.2317
  - (ii) 0.234234234 ...
30. Show that the cube of a positive integer of the form  $6q + r$ ,  $q$  is an integer and  $r = 0, 1, 2, 3, 4, 5$  is also of the form  $6m + r$ .
31. Show that one and only one out of  $n$ ,  $n + 4$ ,  $n + 8$ ,  $n + 12$  and  $n + 16$  is divisible by 5, where  $n$  is any positive integer.
32. Show that there is no positive integer ' $n$ ' for which  $\sqrt{n-1} + \sqrt{n+1}$  is rational.

## 2. POLYNOMIALS

1. Is  $2 - \sqrt{3}x + 5x^2$  a polynomial or not?
2. Write the zeros of the polynomial  $x^2 - 5x + 6$ .
3. If  $\alpha$  and  $\beta$  are the zeros of  $x^2 + 5x + 12$ , then what is the value of  $\alpha\beta$ ?
4. Find the quadratic polynomial, whose zeros are  $\frac{5}{3}$  and  $\frac{-3}{2}$ .
5. If the sum of the zeros of the polynomial  $f(x) = 2x^3 - kx^2 + 4x - 5$  is 6, then what is the value of  $k$ ?
6. Can  $x - 1$  be the remainder on division of a polynomial  $P(x)$  by  $x + 3$ ?
7. What is the sum of the zeros of the polynomial  $4x^2 - 16x + 12$ ?
8. If one zero of the quadratic polynomial  $P(x) = x^2 + 4kx - 25$  is negative of the other, find the value of  $k$ .
9. If  $\alpha, \beta$  are the zeros of the polynomial  $f(x) = ax^2 + bx + c$ , then find  $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$ .
10. If 1 is the zero of the quadratic polynomial  $x^2 + kx - 5$ , then find the value of  $k$ .
11. If one root of the polynomial  $f(x) = x^2 + 5x + k$  is reciprocal of the other, find the value of  $k$ .
12. Find the zeros of the linear polynomial  $y = 2x - 7$  graphically.
13. If  $\alpha, \beta$  are the zeros of  $f(x) = px^2 - 2x + 3p$  and  $\alpha + \beta = \alpha\beta$ , then find the value of  $p$ .
14. What must be subtracted from the polynomial  $8x^4 + 14x^3 + x^2 + 7x + 8$ , so that the resulting polynomial is exactly divisible by  $4x^2 - 3x + 2$ ?
15. If  $(x + b)$  is a factor of  $2x^2 + 2bx + 5x + 10$ , find  $b$ .
16. If the product of zeros of the polynomial  $ax^2 - 6x - 6$  is 4, find the value of  $a$ .
17. If  $\alpha$  and  $\beta$  are the zeros of the quadratic polynomial  $p(t) = t^2 - 5t - 1$ , find the value of  $\frac{\alpha^2}{\beta^2} + \frac{\beta^2}{\alpha^2} + 2\left(\frac{\alpha}{\beta} + \frac{\beta}{\alpha}\right) - \alpha\beta$ .
18. If  $\alpha$  and  $\beta$  are the zeros of the polynomial  $x^2 - 5x + 6$ , find a polynomial whose zeros are  $2\alpha - 1$  and  $2\beta - 1$ .
19. Divide the polynomial  $2x^2 + 3x + 1$  by the polynomial  $x + 2$  and verify the division algorithm.
20. If  $\alpha$  and  $\beta$  are the zeros of the quadratic polynomial  $f(x) = 2x^2 - 5x + 7$ , find a polynomial whose zeros are  $2\alpha + 3\beta$  and  $3\alpha + 2\beta$ .
21. Check whether the polynomial  $g(x) = x^2 - 2$  is a factor of the polynomial  $f(x) = x^4 + x^3 + x^2 - 2x - 3$  by applying division algorithm.
22. If  $\alpha$  and  $\beta$  are the zeros of the quadratic polynomial  $f(t) = t^2 - p(t + 1) - a$ , show that  $(\alpha + 1)(\beta + 1) = 1 - a$ .
23. If  $(x - 2)$  is a factor of  $x^3 + ax^2 + bx + 16$  and  $b = 4a$ , find the values of  $a$  and  $b$ .
24. If the zeros of the quadratic polynomial  $x^2 + (a + 1)x + b$  are 2 and  $-3$ , then find  $a$  and  $b$ .
25. Check whether the polynomial  $t^2 - 3$  is a factor of the polynomial  $2t^4 + 3t^3 - 2t^2 - 9t - 12$ , by dividing the second polynomial by the first polynomial.
26. Find all the zeros of  $2x^4 - 3x^3 - 3x^2 + 6x - 2$ , if you know that two of its zeros are  $\sqrt{2}$  and  $-\sqrt{2}$ .
27. Find all the zeros of the polynomial  $f(x) = 2x^4 - 3x^3 - 5x^2 + 9x - 3$ , it being given that two of its zeros are  $\sqrt{3}$  and  $-\sqrt{3}$ .
28. If the polynomial  $x^4 - 6x^3 + 16x^2 - 25x + 10$  is divided by another polynomial  $x^2 - 2x + k$ , the remainder comes out to be  $x + a$ , find  $k$  and  $a$ .
29. If  $\sqrt{2}$  is a zero of the cubic polynomial  $6x^3 + \sqrt{2}x^2 - 10x - 4\sqrt{2}$ , then find its other two zeros.
30. If  $x - \sqrt{5}$  is a factor of the cubic polynomial  $x^3 - 3\sqrt{5}x^2 + 13x - 3\sqrt{5}$ , then find all the zeros of the polynomial.

## 4. QUADRATIC EQUATIONS

1. If  $x = k\sqrt{3}$  is a solution of the quadratic equation  $x^2 + \frac{x}{\sqrt{3}} - 4 = 0$ , then find the value of  $k$ .
2. Find the discriminant of the quadratic equation  $2x^2 - 5x - 3 = 0$ .
3. For what value of ' $a$ ', the quadratic equation  $ax^2 - 2ax + 2a + 1 = 0$  has repeated roots?
4. For what value of ' $k$ ', the quadratic equation  $2x^2 + 2kx + \sqrt{2}k = 0$  has equal roots?
5. What is the value of  $\sqrt{12 + \sqrt{12 + \sqrt{12} \dots}}$  ?
6. In a right  $\triangle ABC$ , right angled at  $B$ , if  $AB = 7x + 3$ ,  $BC = 3x - 2$  and  $CA = 9x - 2$ , then find the value of  $x$ .
7. Show that  $x = 2$  is a solution of  $3x^2 - 13x + 14 = 0$ .
8. For what value of  $k$  does the equation  $9x^2 + 3kx + 4 = 0$  has equal roots?
9. Find the roots of the quadratic equation  $5x^2 + 13x + 8 = 0$  using quadratic formula.
10. Find the roots of the quadratic equation  $\frac{2}{5}x^2 - x - \frac{3}{5} = 0$  by the factorisation method.
11. Solve the quadratic equation  $2x^2 + ax - a^2 = 0$ .
12. Find the values of  $p$  for which the quadratic equation  $4x^2 + px + 3 = 0$  has equal roots.
13. Is 0.2 a root of the equation  $x^2 - 0.4 = 0$ ? Justify.
14. Write the condition to be satisfied for which equation  $ax^2 + 2bx + c = 0$  and  $bx^2 - 2\sqrt{ac}x + b = 0$  have equal roots.
15. If equation  $ax^2 + bx + c = 0$  has equal roots, then find ' $c$ ' in terms of ' $a$ ' and ' $b$ '.
16. Write the set of values of  $k$  for which the quadratic equation  $2x^2 + kx + 8 = 0$  has real roots.
17. Find the values of  $p$  and  $q$  for which  $x = \frac{3}{4}$  and  $x = -2$  are the roots of the equation  $px^2 + qx - 6 = 0$ .
18. If one root of the quadratic equation  $2x^2 + kx - 6 = 0$  is 2, find the value of  $k$ . Also, find the other root.
19. Solve:  $\frac{4}{x} - 3 = \frac{5}{(2x+3)}, x \neq 0, \frac{-3}{2}$ .
20. Solve:  $\frac{x}{x-1} + \frac{x-1}{x} = 4, x \neq 0, x \neq 1$
21. If  $-5$  is a root of the quadratic equation  $2x^2 + px - 15 = 0$  and the quadratic equation  $p(x^2 + x) + k = 0$  has equal roots, find the value of  $k$ .
22. Show that the equation  $x^2 + px - 1 = 0$  has real and distinct roots for all real values of  $p$ .
23. If the roots of the equation  $(a^2 + b^2)x^2 - 2(ac + bd)x + (c^2 + d^2) = 0$  are equal, prove that  $\frac{a}{b} = \frac{c}{d}$  or  $ad = bc$ .
24. Divide 12 into two parts such that the sum of their squares is 74.
25. Solve:  $9x^2 - 9(a + b)x + (2a^2 + 5ab + 2b^2) = 0$
26. Find a natural number whose square diminished by 84 is equal to thrice of 8 more than the given number.
27. A natural number, when increased by 12, equals 160 times its reciprocal. Find the number.
28. A train travelling at a uniform speed for 360 km, would have taken 48 min less to travel the same distance, if its speed were 5 km/h more. Find the original speed of the train.
29. Prove that both the roots of the equation  $(x - a)(x - b) + (x - b)(x - c) + (x - c)(x - a) = 0$  are real but they are equal only when  $a = b = c$ .
30. A two-digit number is such that the product of its digits is 18. When 63 is subtracted from the number, the digits interchange their places. Find the number.
31. The sides (in cm) of a right triangle containing the right angle are  $3(x + 1)$  and  $(2x - 1)$ . If the area of triangle is 30 sq. cm, find the sides of the triangle.
32. The distance between Mumbai and Pune is 192 km. Travelling by the Deccan Queen, it takes 48 minutes less than another train. Calculate the speed of the Deccan Queen, if the speeds of the two trains differ by 20 km/hr.