D.A.V. PUBLIC SCHOOL, BERHAMPUR, ODISHA
HOLIDAY HOMEWORK & PROJECT GUIDELINES FOR TERM - I
Std. IX (2019 - 20)
(TO BE COMPLETED DURING SUMMER VACATION)

C: 42/2019-20   **Dt: 30th April 2019**

Dear Students

1. You are quite aware that your school has closed for summer vacation from 30th April 2019 to 17th June 2019 and shall reopen on 18th June 2019. **However, School office at Gandhi Nagar will remain open during Summer Vacation on all working days for all office related matters.**

2. Please note that Bus timing on 18th June 2019 shall be 07:30 am to 11:30 am with five periods Timetable.

3. Summer vacation is the longest period of relaxation as well as of renewing your relationship with relative and friends especially Grandparents. Spend time with them and learn about various things and values of social life.

4. This is your enjoyable sleep time. Home schooling time, family time, fun time as well a stress free time.

5. If you visit any interesting places like hill station, monuments etc. collect information and share it with your friends.

You Can Surely

✓ Learn to prepare book marks for your note book and chalk boxes for your class.

✓ Learn some stitching patterns, craft items etc.

✓ Do physical exercises like cycling, jogging, swimming etc.

✓ Try to grow plants and make kitchen garden.

✓ Try to help your parents and learn their way of interacting with elders.

✓ Use this vacation as a power charger, so as to be healthier, happier & more relaxed person.

✓ Remember to complete the holiday home work given below along with individual project. (Guidelines for the project having given this paper)

A. HOLIDAY HOMEWORK

Revise each and every chapter of all the subjects completed in April and complete the following work.

English	**Article Writing:** Recently you came upon a news item about the lack of fitness and sedentary life style among the youngsters. Write an article for your school magazine highlighting. 'The importance of exercise and yoga in daily life'. You are Anuska.
Hindi	**Write Anuchheda:** Samaya ka sadupayog, Mera jiban ka lakhsya **Write Patra:** Achhe aanka lane ki salaha dete huea chhote bhai ko ek patra likhye.
Odia	Read, write & learn Swara Sandhi. Write the Essay Utkal Divas in composition notebook.
Sanskrit	Write one paragraph about environments & paste picture in A4 size paper.
Maths	• Revise Chp- 1 & 2 and practice extra sums related to the topic from reference book in H.W Copy. (Minimum 30 sums) • Represent root over of 11 by Square Root Spiral Method in A4 size paper. (Colour it) • Complete the Assignments of Ch -1 & 2 given along with this Holiday Homework in a separate notebook.
G.Sc	**Biology**: Revise Lesson- 5, practice the diagrams. **Chemistry:** Revise Lesson- 1 **Physics**: Revise Lesson - 8
S.ST	**Geography**: Read Ln- 01

B. INTEGRATED INTERDISCIPLINARY PROJECT

SAMPLE OF FRONT PAGE OF PROJECT

> **INTEGRATED**
> **INTERDISCIPLINARY PROJECT**
> **Term – I (2019-20)**
>
> **TOPIC**
> **GREEN REVOLUTION IN INDIA**
>
> Space for Drawing / Pictures
>
> Submitted By:
>
> Name : _____
>
> Class / Sec _____Roll No._____
>
> **D.A.V. PUBLIC SCHOOL, BERHAMPUR**

INTRODUCTION
S.ST   : Historical analysis of green revolution.
G.SC   : Major groups of activities for improving crop yields for green revolution.
MATHS   : Comparative study of food grains production in different states of India.
CONCLUSION

NOTE: The project should be approximately of 12 pages.

CRITERIA OF ASSESSMENT OF THE PROJECT
- MATHS:
    - Graphical Representation – 2
    - Data collection and analysis -2
    - Neatness – 1
- S.ST:
    - Presentation – 2
    - Content And Accuracy – 1
    - Map Skill – 1
    - Neatness – 1
- SCIENCE:
    - Creativity and Presentation – 2
    - Content, accuracy – 2
    - Timely submission – 1

Principal In-Charge

Mathematics, Std. IX (Chapter – 1)

1. Find five rational numbers between $\dfrac{3}{5}$ and $\dfrac{4}{5}$

2. Find five rational numbers between $\dfrac{1}{2}$ and $\dfrac{3}{4}$

3. Find six rational numbers and six irrational numbers between 0.12 and 0.32

4. Find two rational numbers and two irrational numbers between 1 and 3.

5. $\dfrac{a^n \times 3^2 \times (3^{\frac{-1}{2}})^{-2} - 27^n}{3^{3m} \times 2^3} = 27 \cdot \dfrac{1}{27}$ prove that $m - n = 1$

6. If $2^a = 3^b = 6^c$ then show that $c = \dfrac{ab}{a+b}$

7. $\left(\dfrac{x^a}{x^b}\right)^{a^2 + ab + b^2} \times \left(\dfrac{x^b}{x^c}\right)^{b^2 + bc + c^2} \times \left(\dfrac{x^c}{x^a}\right)^{c^2 + ac + a^2} = 1$

8. Simplify :- $\dfrac{2^{x+5} - 4 \times 2^x}{16 \times 2^{x+2} - 2^{x+3}}$

9. If $a^x = b^y = c^z$ and $b^2 = ac$ prove that $y = \dfrac{2xy}{x+z}$

10. If $x = \dfrac{\sqrt{p+2q} + \sqrt{p-2q}}{\sqrt{p+2q} + \sqrt{p-2q}}$ then show that $qx^2 - px + q = 0$

11. Simplify :- $\dfrac{7\sqrt{3}}{\sqrt{10} + \sqrt{3}} - \dfrac{2\sqrt{5}}{\sqrt{6} + \sqrt{5}} - \dfrac{3\sqrt{2}}{\sqrt{15} + 3\sqrt{2}}$

12. If $x = 3 - 2\sqrt{2}$, then find $x^2 - \dfrac{1}{x^2}$

13. If $\dfrac{2}{\sqrt{3} + \sqrt{5}} + \dfrac{5}{\sqrt{3} - \sqrt{5}} = a\sqrt{3} + b\sqrt{5}$, then find a and b.

14. If $x = 3 + 2\sqrt{2}$ then find $\sqrt{x} + \dfrac{1}{\sqrt{x}}, \sqrt{x} - \dfrac{1}{\sqrt{x}}$

15. Simplify $\left(\dfrac{81}{16}\right)^{\frac{-3}{4}} \times \left\{\left(\dfrac{25}{9}\right)^{\frac{-3}{2}} \div \left(\dfrac{5}{2}\right)^{-3}\right\}$

16. Simplify :- $\dfrac{\sqrt{32} + \sqrt{48}}{\sqrt{8} + \sqrt{12}}$

17. Find the value of $\dfrac{4}{(216)^{\frac{-2}{3}}} + \dfrac{1}{(256)^{\frac{-3}{4}}} + \dfrac{2}{(243)^{\frac{-1}{5}}}$

18. If $x = 7 - 4\sqrt{3}$, then find $\sqrt{x} + \dfrac{1}{\sqrt{x}}$

19. If $x = \dfrac{\sqrt{3} - \sqrt{2}}{\sqrt{3} + \sqrt{2}}$ and $y = \dfrac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$, then find $x^2 + y^2$

20. Simplify :- $\dfrac{\sqrt{a+x} + \sqrt{a-x}}{\sqrt{a+x} - \sqrt{a-x}}$. Find the value when $x = \dfrac{2ab}{1+b^2}$

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1. Prove that : $(x+y)^3+(y+z)^3+(z+x)^3-3(x+y)(y+z)(z+x) = 2(x^3+y^3+z^3-3xyz)$

2. Prove that : $(a+b+c)^3-a^3-b^3-c^3 = 3(a+b)(b+c)(c+a)$

3. Factorise :

   i) $(x-a)^3+(x-b)^3+(x-c)^3$, where $x = \dfrac{a+b+c}{3}$

   ii) $(x+y-z)^3+(x-y+z)^3-(x-y-z)^3$, where $x+y+z = 0$

4. If $(a+b)^2 = 2a^2+2b^2$, Show that $a = b$.

5. Factorise : $(x^2-4x)(x^2-4x-1)-20$.

6. Using factor theorem, show that $a+b$, $b+c$, $c+a$ are the factors of $(a+b+c)-(a^3+b^3+c^3)$

7. If $\dfrac{x^2+1}{x}=11$, find the value of $x^4+\dfrac{1}{x^4}$.

8. If $9x^2+25y^2 = 181$ and $xy = -6$, find the value of $3x+5y$.

9. If $x+y = 8$, $xy = 15$, then find the value of $x^4+x^2y^2+y^4$.

10. If $x^2-5x-1 = 0$, then find the value of $x^2+\dfrac{1}{x^2}$.

11. If $a+b+c = 0$, then find the value of $\dfrac{(b+c)^2}{bc}+\dfrac{(c+a)^2}{ca}+\dfrac{(a+b)^2}{ab}=0$.

12. Factorise : (i) $(3a-1)^2-6a+2$ (ii) $(a+b)^3-3a^2b(a+b)$

13. The polynomial ax^3+3x^2-3 and $2x^3-5x+a$ when divided by $(x-4)$, leave remainders R_1 and R_2. Find the value of 'a' if $2R_1-R_2 = 0$.

14. Find all the integral zeros of the polynomials $P(y) = y^3-2y^2+y+4$.

15. Find the values of 'a' an 'b', so that 1 and 2 are the zeros of the polynomial x^3-10x^2+ax+b.

16. If $(x+a)$ is the factor of the polynomial x^2+px+q and x^2+mx+n, prove that $a = \dfrac{n-q}{m-p}$.

17. If $(x-2)$ and $\left(x-\dfrac{1}{2}\right)$ are the factors of the polynomial px^2+5x+r, prove that $p = r$.

18. If (x^2-1) is a factor of $ax^4+bx^3+cx^2+dx+e$. Show that $a+c+e = b+d = 0$.

19. Without actual division, prove that $2x^4-5x^3+2x^2-x+2$ is divisible by x^2-3x+2.

20. Find the values of p and q so that $x^4+px^3+2x^2-3x+q$ is divisible by (x^2-1).

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