KENDRIYA VIDYALAYA No. 2 HINDON
Summer Vacation Homework

Class - IX   **Subject -Maths**

INSTRUCTIONS:

- *Read all the questions carefully before solving. Write the solution of questions in Mathematics homework or Activity notebook.*

- *Complete the project separately on A4 sheets in neat and clear hand writing and attractive.*

- *Write your name, class and section clearly at the front cover of project file.*

Section A (Questions)

1. Let x and y be rational and irrational numbers, respectively. Is x+y necessarily an irrational number? Give an example in support of your answer.

2. Classify the following numbers as rational or irrational with justification

(i) $\sqrt{196}$ (ii) $3\sqrt{18}$

(iii) $\sqrt{\dfrac{9}{27}}$ (iv) $\dfrac{\sqrt{28}}{\sqrt{343}}$

(v) $-\sqrt{0.4}$ (vi) $\dfrac{\sqrt{12}}{\sqrt{75}}$

(vii) 0.5918   (viii) $(1+\sqrt{5})-(4+\sqrt{5})$

(ix) 10.124124...   (x) 1.010010001...

3. Divide x^3-3x^2+5x-3 by x-2 and find the quotient and remainder.

4. Find three rational numbers between
  (i) -1 and -2
  (ii) 0.1 and 0.11
  (iii) 5/7 and 6/7
  (iv) 1/4 and 1/5

5. Locate √5, √9.2 and √7 on the number line.

6. Express the following in the form p/q, where p and q are integers and q≠0
  (i) 0.2
  (ii) 0.888...
  (iii) 5.2
  (iv) 0.001
  (v) 0.2555...

7. Determine the degree of each of the following polynomials. (i) 2x – 1
  (i) -10
  (ii) $x^3 - 9x + 3x^5$
  (iii) $y^3(1 - y^4)$

8. Find p(0), p(1) and p(-2) for the following polynomials
  (i) $p(x) = 10x - 4x^2 - 3$
  (ii) $p(y) = (y + 2)(y - 2)$

9. Which of the following expressions are polynomials? Justify your answer:

(i) 8

(ii) $\sqrt{3}x^2 - 2x$

(iii) $1 - \sqrt{5x}$

(iv) $\dfrac{1}{5x^{-2}} + 5x + 7$

(v) $\dfrac{(x-2)(x-4)}{x}$

(vi) $\dfrac{1}{x+1}$

(vii) $\dfrac{1}{7}a^3 - \dfrac{2}{\sqrt{3}}a^2 + 4a - 7$

(viii) $\dfrac{1}{2x}$

10. Find the zeroes of the polynomial in each of the following,

(i) $p(x) = x - 4$

(ii) $g(x) = 3 - 6x$

(iii) $q(x) = 2x - 7$

(iv)

11. If $a = \dfrac{3 + \sqrt{5}}{2}$, then find the value of $a^2 + \dfrac{1}{a^2}$.

12. By remainder theorem, find the remainder when p(x) is divided by g(x)

(i) $p(x) = x^3 - 2x^2 - 4x - 1$, $g(x) = x + 1$

(ii) $p(x) = x^3 - 3x^2 + 4x + 50$, $g(x) = x - 3$

13. Simplify

(i) $(1^3 + 2^3 + 3^3)^{\frac{1}{2}}$

(ii) $\left(\dfrac{3}{5}\right)^4 \left(\dfrac{8}{5}\right)^{-12} \left(\dfrac{32}{5}\right)^6$

(iii) $\left(\dfrac{1}{27}\right)^{\frac{-2}{3}}$

(iv) $\left[\left((625)^{-\frac{1}{2}}\right)^{-\frac{1}{4}}\right]^2$

(v) $\dfrac{9^{\frac{1}{3}} \times 27^{-\frac{1}{2}}}{3^{\frac{1}{6}} \times 3^{-\frac{2}{3}}}$

(vi) $64^{-\frac{1}{3}}\left[64^{\frac{1}{3}} - 64^{\frac{2}{3}}\right]$

(vii) $\dfrac{8^{\frac{1}{3}} \times 16^{\frac{1}{3}}}{32^{-\frac{1}{3}}}$

14. Find the value of m, so that 2x -1 be a factor of $8x^4 + 4x^3 - 16x^2 + 10x + m$

15. Factorise the following:

(i) $9x^2 + 4y^2 + 16z^2 + 12xy - 16yz - 24xz$

(ii) $25x^2 + 16y^2 + 4Z^2 - 40xy + 16yz - 20xz$

16. Prepare 10 -10 MCQ TYPE QUESTIONS from CHAPTER1 and 2(covered so far) (soft copy). Also write the solutions for quiz competition in class.

Section B (Project work/Activities)

17. Make a project on the title **"π - WORLD'S MOST MYSTERIOUS NUMBER".** It must contain 3-5 pages

Semi Prime Numbers

A natural number that can be expressed as a product of two prime numbers is called **semi-prime** number.

For example, 77 is semi-prime since it is a product of two prime numbers, 7 and 11.

[Remember that 1 is not prime.]

Question 1. Find the smallest semi-prime number.

Question 2. Two consecutive numbers from 10 to 25 which are semi-prime _____ .

a) 20 and 21
b) 14 and 15
c) 15 and 16
d) 22 and 23

18. Perform following activities and write in activity notebook:

• **Activity 1: <u>OBJECTIVE</u>:** To construct a square-root spiral."

• **Activity 2: <u>OBJECTIVE</u>** : To verify the algebraic identity : $(a+b)^2 = a^2 + 2ab + b^2$

19. Prepare a mathematical Toy (take help from Google/ youtube) Write a brief Write-up about it and prepare for the class presentation

20. CCT QUESTION

Question 3. Two numbers are said to be co-prime if their HCF is 1. Match the Pair of numbers given in column X with their corresponding properties in Column Y by drawing lines.

Column X		Column Y
A.	(77, 33)	1. co primes as well as semi primes
B.	(75, 88)	2. Neither semiprime nor coprime
C.	(69 ,77)	3. semiprime but not coprime
D.	(56, 63)	4. coprime but not semiprime

Q-1 What is meant by latent heat of vaporization?

Q-2 Why does honey diffuse in water at a slower rate than ink?

Q-3 Carbon dioxide is a gas. Justify the given statement by giving two reason.

Q-4 On suffering from fever which will lower down your body temperature more, ice or ice cold-water? Why?

Q-5 osmosis is a special kind of diffusion, comment?

Q-6 Draw a welled labelled diagram showing sublimation of ammonium chloride.

Q-7 What is dry ice? How it is formed?

Q-8 Explain how ice floats on water?

Q-9 (i) What temperature in kelvin scale in equal is equal to 50* C?

  (ii) Describe an activity to show that rate of evaporation increase with surface area.

  (iii) State two difference between evaporation and boiling?

Q-10 A sponge can be compressed yet it is a solid why? Explain?

Q-11 What is the importance of reference point in stating motion?

Q-12 A particle is moving in a circular path of radius r, what will be the displacement after half a circle?

Q-13 A physical quantity measured is -10m/s. Is it a speed or a velocity?

Q-14 A body accelerate uniformly, so that its velocity change from u to v. What will be its average velocity?

Q-15 Differentiate between distance and displacement.

Q-16 A bridge is 500m long, a 100m long train crosses the bridge at a speed of 30m/s. Find the time taken by train to cross it.

Q-17 A fan rotates at 100rpm. Find its angular velocity and linear velocity, if tip of its blades is 0.20m away from the axis of rotation?

Q-18 Explain how is it possible for an object to move with a constant speed but with uniform acceleration?

Q-19 An object P is moving with a constant velocity for 5 mins. Another objet Q is moving with changing velocity for 5 mins. Out of these two object, which one has acceleration. Explain.

Q-20 A car covers first 50km at a uniform velocity of 45km/h and the next 50km at 90km/h. Find the average velocity of the car?

Q-21 Why is nucleus called controller or brain of the cell?

Q-22 What do you mean by plasmolysis?

Q-23 Write two functions indicating that lysosomes are the suicidal bags of the cell.

Q-24 Bacteria do not have chloroplast, but some bacteria are photoautotrophic in nature and perform photosynthesis which part of bacterial cell perform this?

Q-25 Explain how do cell walls permits the cell of fungi to withstand very dilute external media without bursting.

Q-26 List the contributions of the scientists given below in context of the study of cells.

(i)   Antony Van Leeuwenhoek.
(ii)   Robert Brown.
(iii)   Camillo Golgi.

Q-27 State some difference between cytoplasm and nucleoplasm.

Q-28 Draw well labelled diagram of a plant cell.

Q-29 Draw well labelled diagram of a animal cell.

Q-30 why are mitochondria called power house of the cell? Give three similarities and one difference between mitochondria and plastid.

KENDRIYA VIDYALAYA No. 2 HINDON
Summer Vacation Homework

Class - IX   **Subject –Social Science**

Level-1

Q1 Make a project file on the CBSE topic: DISASTER MANAGEMENT include all natural and   man made disaster with picture.

Q2 Online outline map of India mark the following:

      A. Longitudinal and latitudinal extent of India

      B. Neighbouring countries of India

      C. States lying on of tropic of cancer.

      D.States and capitals of India and union Territories

      E. Standard Meridian of India

 Online outline map of France mark the following:

      A. Ports of France related to the slave trade: (i) Nantes (ii) Bordeaux
      B. Capital of France.
      C. A place from where volunteers sang national anthem of Frence.

Q.3 Prepare 25-25 MCQS from each lesson. And learn these chapter for PT-1 exam

      History chapter-1

      Geography chapter-1

      Political chapter -1

      Economics chapter-1

Q.4 Explain the roll of philosopher in French revolution.

Q.5 Write a note on Napoleon Bonaparte.

Q.6 How have the ancient and much older land routs contributed to exchange of ideas and goods?

Q.7 What is time lag between Arunachal Pradesh and Gujarat? How is a uniform time set at all places?

Q.8 What is the aim of production?state any four requirements needed for production.

Q.9 What are the different ways of increasing production on the same piece of land? Use examples to explain.

 # Prepare a Portfolio file – prepare 1ˢᵗ page with biodata and paste geography

Chapter-1 map work

Level-2

Q1 Make a project file on the CBSE topic: DISASTER MANAGEMENT include all natural and man made disaster with picture.

Q2 Online outline map of India mark the following:

A. Neighbouring countries of India

B. States lying on of tropic of cancer.

C.States and capitals of India and union Territories

D. Standard Meridian of India

Online outline map of France mark the following:

A. Ports of France related to the slave trade: (i) Nantes (ii) Bordeaux
B. Capital of France.
C. A place from where volunteers sang national anthem of Frence.

Q.3 Prepare 15-15 MCQS from each lesson. And learn these chapter for PT-1 exam

History chapter-1

Geography chapter-1

Political chapter -1

Economics chapter-1

Q.4 Write a note on Jacobin Club.

Q. How was Subsistence crises happened in france?

Q.6 Why is Indian Ocean named after our country ? Give three reasons.

Q.7 What are the features of green revolution?

Q.8 Write any five arguments in favour of democracy.

Q.9 Read all the pictures given in civics chapter -1 and write answer in one lines.

 # Prepare a Portfolio file – prepare 1st page with biodata and paste geography

Chapter-1 map work

<center>

Level-3
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Q1 Make a project file on the CBSE topic: DISASTER MANAGEMENT include all natural and man made disaster with picture

Q2 Online outline map of India mark the following:

A. Neighbouring countries of India

B. States lying on of tropic of cancer.

C.States and capitals of India and union Territories

D. Standard Meridian of India

Online outline map of France mark the following:

A. Ports of France related to the slave trade: (i) Nantes (ii) Bordeaux
B. Capital of France.

Q.3 Prepare 10-10 MCQS from each lesson. And learn these chapter for PT-1 exam

History chapter-1

Geography chapter-1

Political chapter -1

Economics chapter-1

Q.4 Make a flow chart on structure of French society.

Q. How was Subsistence crises happened in france?

Q.6 Describe the location and size of India in three points each.

Q.7 How land is distributed among the farmers of palampur? Explain.

 # Prepare a Portfolio file – prepare 1ˢᵗ page with biodata and paste geography

Chapter-1 map work.

IMPORTANT INSTRUCTIONS

   ⬜ MAKE A SEPARATE NOTEBOOK AND DO ALL THE GIVEN HOMEWORK IN IT.

   ⬜ DO IT IN THE SAME SEQUENCE AS GIVEN.

SECTION A-READING

Q1 Read the passage given below:

I saw 'Jaws', the popular shark movie, the summer it came out, in 1975 and became paranoid about sharks. Though I kept swimming after Jaws, it was always with the vague fear that a shark's teeth could tug on my leg at any moment. Never mind that there'd been only two shark bites since 1900 on the Connecticut coast, where I lived.

So, when I got this assignment for the National Geographic magazine, I decided to accept and do what I'd never wanted to do: swim with the sharks. I had to go to a place in the Bahamas known as Tiger Beach and dive with tiger sharks, the species responsible for more recorded attacks on humans than any shark except the great white. It was to be my first dive after getting certified—which meant it would be my first dive anywhere other than a swimming pool or a quarry—and without a diver's cage. Most people who got wind of this plan thought I was either very brave or very stupid.

But I just wanted to puncture an illusion. The people who know sharks intimately tend to be the least afraid of them, and no one gets closer to sharks than divers. The divers who run operations at Tiger Beach speak lovingly of the tiger sharks the way people talk about their children or their pets. In their eyes, these sharks aren't man-eaters any more than dogs are.

The business of puncturing illusions is never just black and white. My fellow divers had hundreds of dives under their belt and on the two-hour boat ride to the site on the morning of our first dive, they kept saying things like, "Seriously, I really can't believe this is your first dive." All this was okay with me until I reached the bottom and immediately had to fend off the first tiger shark, I had ever laid eyes on. However, when I watched the other divers feeding them fish and steering them gently, it became easy to see the sharks in a very benign light.

I think it would be unfair not to mention that though tiger sharks are apex predators. They act as a crucial balancing force in ocean ecosystems, constraining the numbers of animals like sea turtles and limit their behaviour by preventing them from overgrazing the sea grass beds. Furthermore, tiger sharks love warm water, they eat almost anything, have a huge litter and are the hardiest shark species. If the planet and its oceans continue to warm, some species will be winners and others will be losers, and tiger sharks are likely to be winners.

Based on your understanding of the passage, answer the questions given below.

1. Cite a point in evidence, from the text, to suggest that the writer's post-Jaws fear was not justified.

2. State any one trait of the writer that is evident from lines 5-10 and provide a reason for your choice.

3. People thought the writer was 'either brave or very stupid'. Why did some people think that he was 'very stupid'?

4. Why does the writer say that people who know sharks intimately tend to be least afraid of them?

5. Rewrite the given sentence by replacing the underlined phrase with another one, from lines 10 – 20.

Some academicians think that reward, as a form of discipline, is a simple right or wrong issue.

6. What does the use of the phrase 'benign light' suggest in the context of the writer's viewpoint about the tiger sharks?

7. Select a suitable phrase from lines 15-25 to complete the following sentence appropriately.

I agree the team will find this experience tough, but competing will be easier next time after they get this tournament _____.

8. Apex predators serve to keep prey numbers in check. How can we say that tiger sharks are apex predators?

9. Analyse why having a large litter is one of the features that empowers tiger sharks to emerge winners if global warming persists.

Q2 Read the passage given below:

The Rajasthan Set of a Netflix film is Now Producing Champion Skaters. Skater Girl's set, which is now a public park in Khempur, is training village children to skate for free. This Desert Dolphin Skate Park is located in Khempur, which is about 40km from Udaipur. Film sets usually die soon after a movie has been wrapped up. The set of the Netflix original movie, Skater Girl (released on 11 June 2021), has lived on and is producing sports stars. The movie revolves around a 16-year-old girl from a Rajasthan village who is introduced to skating through a chance encounter with a British-Indian woman, in Khempur, a village about 40km from Udaipur.

The sport changes her life in the movie, and the park is changing the lives of many other children in the village. Since the movie wrapped in 2019, the Desert Dolphin Skate Park has been the ground for training hundreds of village children to skate for free. Four kids from Khempur have gone on to represent Rajasthan in the National Skateboarding Championship in Chandigarh. A boy who was earlier considered "slow" took part in the competition and topped his district in Sanskrit. "He's an expressive and creative child who just needed a catalyst to unleash his real talent and build his confidence. These kids who had never stepped on a skateboard before the skatepark was made, are now in state jerseys travelling for the first time outside their villages to take part in a national level championship," says Manjari Makijany, the maker of Skater Girl and also the daughter of Mac Mohan, who played Sambha in the movie Sholay.

This Park sprawls across 14,500sq. ft and is open to all and has become a personal endeavour for Makijany and her producing partners. The family has set up a trust called The Living Grace Foundation to support the project. The organisation has been providing skateboards, safety equipment and training for free, to the children. Zeroing on the location was no easy task.

The filmmaker travelled thousands of kilometres through scorching summers to find the right location. While the vibrancy and picturesque backdrop of Rajasthan was one of the reasons they chose the state, they also wanted to pick a place where people would take to skating."We had three prerequisites to lock a place: it had to have a rustic backdrop; have concrete roads so kids could skate, and there had to be over a thousand kids in and around the village so the skatepark could be beneficial to the local community after the film," says Makijany. Khempur checked all three boxes for them. "The children of Khempur were some of the most creative ones we met—they had made makeshift skateboards out of wood and scrap material. We feel incredibly proud of these kids and how they've excelled overall at school and in skating.

1 Pick the option that suitably paraphrases the following excerpt from the text. Film sets usually die soon after a movie has been wrapped up. The set of the Netflix original movie…has lived on…

A. The personnel who worked on constructing the skate park shall continue to live in the memory of all.

B. The skate park set continues to be used since it was not dismantled after the shooting of the movie.

C. The shooting of the movie involved bringing a dead skate park to life and using it as a set.

D. The villagers of the movie destination felt alive during the shooting of the movie.

2 One of the reasons why Makijany chose Khempur is because she was aware that

A. its summer would bring out the uncomfortable living conditions.

B .the village had children who were creative and fit.

C. lack of concrete roads would make village scenes seem authentic.

D. a large number of children would eventually benefit from the created set.

3 Pick the feature of a dolphin that makes it an appropriate choice for being included in the name for the desert skate park at Khempur.

A. Dolphins have a tapered streamlined body that's thick near the centre and tapers down towards the ends.

B. Dolphins communicate through clicks, whistles, and slapping the water's surface with their tail and bodies.

In part, C. Dolphins are playful and are known for the aerial acrobatics they do out of the water.

D. Dolphins must rise regularly to the surface to breathe.

4 According to the lines given below, what kind of people are Makijany and her producing partners? This Park …is open to all and has become a personal endeavour for Makijany and her producing partners.

A. philanthropists.

B. Stalwarts

C. Consultants

D. Socialites

5 Select the option with an appropriate Cause-Effect relationship, as per the text.

CAUSE EFFECT

CAUSE	EFFECT
A. Boy excelled overall at school	Skateboarding built confidence
B. Boy topped in Sanskrit	Creative and confident
C. Creative and confident boy	excelled overall, at school
D. Skateboarding built confidence	boy topped in Sanskrit

Q3 Letter Writing

1.   Write a letter to your friend who just met with an accident informing him about his speedy recovery in a consoling tone in about 120-150 words. You are Manvi/Manav.

2.   You recently went on a trekking trip from Haridwar to the Pindari Glacier. Taking help from the given information write a letter to your friend telling him/her about your experience. Do not exceed 120 words.

    Day 1: Haridwar – uphill to Loharkhet – tiring first 5 km-enjoyed – trail eased 1 km before Dhakuri

    Day 2: 4 km – meandering trail – teashop

    Day 3: Khati – Diwali – Phurkiya – a tough journey

    Day 4: Pindari and back

Q4 Paragraph Writing

Write a short descriptive paragraph on the famous Indian Scientist Sir C V Raman in 100-150 words on the basis of the following inputs.

Born on 7 November 1888 in Madras-Physician by profession-worked in the field of light scattering-the discovery is known as 'Raman Effect-won Nobel Prize in 1930 for his discovery-elected 'Fellow of the Royal Society in 1924-in 1954 India honoured him with its height civilian award 'Bharat Ratna'-breathed his last on 21 November 1970.

Q5 Dialogue Writing

1. Preeti wants to watch a movie with her friends. She asks her mother for permission. Construct a dialogue between both of them in 100 words.

2. Mallika and Mahima are sisters. Mallika, who is diligent, wants her sister, Mahima, to finish her homework because she often leaves it for the last moment and then begs Mallika for help. Write an appropriate dialogue between them that begins.

ग्रीष्मकालीन अवकाश **व्याकरण**गृह कार्य अपनी उत्तर पुस्तिका में ही करना है।

स्तर १

1. प्रेमचंद की अन्य दो चर्चित कहानियां पढ़िए और उन कहानियों में आपको कौन- सा चरित्र अच्छा लगा और क्यों यह लिखिए।

2. 'लहासा की ओर' पाठ पढ़िए और अपनी किसी यात्रा का वर्णन पाठ के आधार पर कीजिए और उन कारणों का उल्लेख कीजिए जिनके कारण वह यात्रा यादगार रही।

3. 20 उपसर्ग, 20 प्रत्यय एवं उनसे बनने वाले तीन- तीन शब्द लिखिए।

4. 1 से 100 तक गिनती हिंदी में शब्दों में लिखिए।

5. विद्यालय की हॉकी टीम में छोटे भाई के चयन पर उसे शुभकामना पत्र लिखिए।

6. – आपके किसी मित्र ने आपको जरूरी पार्सल भेजा है, जो 20 दिन के बाद भी आपको प्राप्त नहीं हुआ। डाक विभाग को इसकी शिकायत करते हुए पत्र लिखिए।

   - आपका ग्रीष्मकालीन अवकाश कैसा बीत रहा है , अपना अनुभव बताते हुए अपनी दूर की मित्र को पत्र लिखिए।

7. पाठयक्रम से अलग कबीर के दस अन्य दोहे ढूंढकर कॉपी में लिखिए।

8. पढ़ाए गए अलंकारों के पांच - पांच ढूंढकर उदाहरण लिखिए।

9. सामाजिक समस्या पर आधारित कोई दो अनुच्छेद लिखिए।

स्तर २

1- पढ़ाए गए पाठों के प्रश्न - अभ्यास याद करें।

2- 20 उपसर्ग, 20 प्रत्यय एवं उनसे बनने वाले तीन- तीन शब्द लिखिए।

3- हिंदी अखबार/ हिंदी कॉमिक/ हिंदी कहानियां रोज पढ़ें।

4- 10 अखबार की अखबार की सकारात्मक खबरें निकालें व कॉपी में लिखें।

5- पाठयक्रम से अलग कबीर के दस अन्य दोहे ढूंढकर कॉपी में लिखिए।

6- 1 से 100 तक गिनती हिंदी में शब्दों में लिखिए।

7- विद्यालय में बैडमिंटन टूर्नामेंट में प्रथम स्थान प्राप्त करने पर छोटी बहन को शुभकामना पत्र लिखिए।

8- सोसायटी में कचरा जमा होने पर गंदगी व बीमारियां बढ़ने की शिकायत करते हुए नगर निगम को शिकायत पत्र लिखिए।

9- सामाजिक समस्या पर आधारित कोई दो अनुच्छेद लिखिए।

Class - IX   **Subject -Sanskrit**

(Level -1)

1) पाठ्यक्रमस्थ-धातुरूपलेखनं कण्ठस्थीकरणं च ।(पाठ,गम्,शरद्,भू,क्रीड्)पञ्च लकारेषु।

2) पाठ्यक्रमस्थ- शब्दरूपलेखनम् कण्ठस्थीकरणं च |(बालक,कवि,साधु)

3) पञ्च-अपठित-अनुच्छेदानां प्रश्नोत्तरलेखनम् ।

4) पञ्च- चित्रवर्णनम् कुरुत ।

5) पञ्च- पत्रलेखनम् ।

6) स्वरसन्धे: उदाहरणानि लिखत | (प्रत्येकस्य कृते दश उदाहरणानि)

7) प्रतिदिनं संस्कृतपाठ्यपुस्तकस्य एकं पृष्ठम् (01 page) अवश्यं पठन्तु ।