MAHAVIR

SENIOR MODEL SCHOOL

From the Team Leader

Dear Mahavirians and Children,

As the summer break approaches, it brings with it a wonderful opportunity to pause, refresh, explore, and grow. Holidays are not merely a break from school; they are a beautiful phase of learning beyond the classroom walls. While we all look forward to relaxation and family time, it is equally important that the continuum of learning is maintained in meaningful and joyful ways.

With this thought in mind, the Holiday Homework has been thoughtfully designed for each class. The purpose of this work is to keep the young minds engaged, curious, creative, and connected to learning in an enjoyable manner.

Dear children, summer vacations are a wonderful time to discover yourselves, strengthen your interests, and create memories that last forever. Learning happens in many forms — helping your parents with household chores, reading every day, pursuing a hobby, learning a new skill, exploring nature, spending quality time with family, and engaging in creative activities. Each experience teaches something valuable and contributes to your growth as confident, responsible, and independent learners.

Therefore, I encourage every Mahavirian to:

- Read at least two pages of any book every day.
- Pursue a hobby that brings happiness and creativity.
- Learn a new skill such as swimming, skating, dancing, painting, playing a musical instrument, gardening, cooking, or anything that excites and inspires you.
- Devote at least one hour daily to self-study so that the continuity of learning is maintained.

At the same time, spend quality time with your family, stay physically active, play outdoors, appreciate nature, and take care of your health and well-being.

I would also like to lovingly remind all children that the Holiday Homework should be done independently and sincerely. When you complete your work on your own, you develop confidence, responsibility, creativity, and problem-solving skills. Independent work nurtures originality of thought and helps you become a self-reliant learner — a quality that will benefit you throughout life.

Dear parents, your encouragement and gentle guidance during the holidays will go a long way in helping children develop healthy habits, time management, and a love for lifelong learning. More than perfection, we value participation, effort, and the joy of learning.

May this summer break be filled with happiness, learning, exploration, laughter, and beautiful experiences for all of you.

Wishing you a safe, productive, and joyful summer vacation!

Ruchika Sukhija
Principal

HOLIDAY HOMEWORK

GRADE : VIII

संस्कृत

नोट- गृहकार्य को A-4 साइज शीट पर सुंदर लेख में स्टिक फोल्डर में करें।

1. **शब्दरूप**

उकारान्त पुल्लिंग शब्दरूप लिखिए:

भानु ,साधु ,शिशु

2. धातुरूप

निम्नलिखित धातुओं के रूप लट्, लृट्, लङ् व लोट् चारों लकारों में लिखिए:

(गम् (गच्छ्) ,पठ् ,नम् ,अस् ,कृ)

3. पत्र लेखन

मणिका संस्कृत व्याकरण भाग-3 (पृष्ठ संख्या 20-21) से 2 पत्र-पूर्ति करके लिखिए।

4. चित्र वर्णन

व्याकरण मणिका भाग-3 (पृष्ठ संख्या 29) से 2 चित्रों पर आधारित 5-5 वाक्य संस्कृत में लिखिए।

5. **संस्कृत अनुवाद**

निम्न वाक्यों को संयुक्त करके संस्कृत में अनुवाद करें:

1. वृक्ष हमें फल देते हैं।
2. कल विद्यालय में खेल प्रतियोगिता होगी।
3. हमें सदा बड़ों का आदर करना चाहिए।
4. प्रातःकाल सूर्योदय होता है।
5. भारत एक कृषि प्रधान देश है।
6. पुस्तकालय में अनेक पुस्तकें रखी हैं।
7. वर्षा ऋतु में मोर नाचते हैं।
8. गंगा हिमालय से निकलती है।
9. कल हमने रामायण की कथा सुनी।
10. परिश्रम सफलता की मूल कुंजी है।
11. छात्र प्रतिदिन विद्यालय जाते हैं।
12. अध्यापक छात्रों को पढ़ाते हैं।
13. जल हमारे जीवन के लिए अत्यंत आवश्यक है।
14. मैं संस्कृत भाषा सीख रहा हूँ।
15. बगीचे में रंग-बिरंगे फूल खिलते हैं।

MATHEMATICS

This Holidays homework has three Parts:

A. Practice worksheet to be done in Practice Register.

B. Project work to be done according to roll number.

C. Suggested activities to be learnt during the break.

PART A (Practice Worksheet)

Q1.Find:

a) Square of 36

b) Cube of 12

c) Square root of 625

d) Cube root of 1728

Q2. Simplify:

a) $(2^5 \times 2^3)$

b) $(5^7 \div 5^2)$

c) $(3^2)^4$

d) $(3^6 \div 3^8)^4 \times 3^{-4}$

e) $(-2)^5 \div (-2)^4$

f) $(\frac{2}{3})^{-4} \times (\frac{2}{3})^2$

Q3. Express the following in standard form:

i) 6452

ii) 7,80,00,000

iii) 0.0000006

iv) 0 0035

v) 365.05

Q4. Express the following in usual form:

i) 7.45×10^{-9} **ii) 3.678×10^{7}**

Q5. The population of a city is 1.25×10^{7}. If each person consumes 10^{3} litres of water per year, what is the total water consumption in a year? Express your answer in standard form.

Q6. In a physics laboratory, two microscopic particles are being studied. First particle has a mass of 5.2×10^{-12} kg. Another particle has a mass of 3.5×10^{-12} kg. Find the total mass of the two particles?

Q7. A new Digital Locker system is designed to store students' important certificates safely online. To keep the data secure, every user must create a 5-character alphanumeric passcode. Each passcode can include any capital letter (A–Z) or any digit (0–9). How many different 5-character alphanumeric passcodes can be created in total?

Q8. Check whether the following are divisible by 3, 9, or 11 (give reason):

a) 4563 **b) 7281** **c) 458567**

Q9. Find the digital root of:

a) 9876 **b) 45678** **c) 36a+29**

Q10. Fill in the blanks:

a) 10^{4} = _____

b) 2^{6} = _____

c) The smallest perfect square number divisible by 18 is _____

Q11. Compare:

a) (3^{4}) ___ (4^{3}) **b) (2^{7}) ___ (7^{2})**

Q12. Find the smallest number which is divisible by 8, 9, and 10.

Q13. Find smallest number to be multiplied to 8820 to make it a perfect square.

Q14. Determine whether the statements below are "Always True", "Sometimes True" or "Never True." Explain your answer with examples and non-examples:

(a) The sum of two multiples of 8 is always a multiple of 16.

(b) If a number is divisible by 10 and 14, it is divisible by 140.

(c) The sum of three consecutive even numbers is divisible by 6.

Q15. **Find three consecutive integers such that the first number is a multiple of 8, the second number is two more than a multiple of 5, and the third number is a multiple of 19. Are there more such triplets?**

Q16. **Riya has a small bag of marbles. She plays a sorting game with them and observes something interesting:**

When she tries to group the marbles in 2s, one marble is left over.

When she groups them in 3s, two marbles are left over.

When she groups them in 5s, none are left—the marbles fit perfectly.

She also knows the total number of marbles is less than 80.

a) Write down the mathematical conditions that represent Riya's observations.

b) Find the total number of marbles Riya has. Show your reasoning clearly.

Q17. **A company packs items in cube-shaped boxes. Volume of 1 box = 512 cm^3**

a) Find the side of cube.

b) Number of such cubes if the total volume is 4096 cm^3.

c) If side is tripled, how does volume change?

Q18. **Students are arranged in a square. Total number of students is 784.**

a) Find the number of students in each row.

b) If 20 leave, will arrangement remain a perfect square?

Q19. **A teacher writes a number 3456 on the board and asks the following questions.**

(a) Check divisibility by 3 and 9.

(b) Find its digital root.

(c) Is it divisible by 11? Explain

Q20. **In the middle of a beautiful, magical pond lies a bright pink lotus. The number of lotuses doubles every day in this pond. After 30 days, the pond is completely covered with lotuses.**

a) On which day was the pond half full?

b) Write the number of lotuses (in exponential form) when the pond was

(i) fully covered **(ii) half covered**

Q21. **A king decides to distribute his gold coins among his three ministers.**

- **Each minister receives 3 large chests.**
- **Each large chest contains 3 medium-sized boxes.**
- **Each medium-sized box holds 3 small pouches.**
- **Each small pouch contains 3 gold coins.**

(i)Express the number of gold coins each minister receives in exponential form.

(ii)How many gold coins were distributed in total by the king? Express your answer in exponential form.

(iii)If there were 4 ministers instead of 3 (all other counts unchanged), how many total coins would have been distributed?.

(iv)The king takes back a portion of the total coins equal to 3^4. What is the number of coins remaining with the ministers? Express your answer in exponential form.

Q22. <u>ASSERTION REASON QUESTIONS</u>

Choose the correct option for the following questions.

(a) Both A and R are true and R is the correct explanation of A

(b) Both A and R are true but R is not the correct explanation of A

(c) A is true but R is false

(d) A is false but R is true

i) Assertion(A): 64 is both a perfect square and cube
Reason(R): ($64 = 8^2 = 4^3$)

ii) Assertion(A): Product of two perfect squares is a perfect square
Reason(R): ($a^2 \times b^2 = (ab)^2$)

iii) Assertion(A): A number divisible by 9 is also divisible by 3
Reason(R): 9 is a multiple of 3

iv) Assertion(A): Digital root can be used to check divisibility by 9.
Reason(R): Digital root is obtained by repeatedly adding digits.

v) Assertion(A): Cube of an even number is always even.
Reason(R): Even × Even × Even = Even.

Q23. Who am I.

a) I am a number whose digital root is 5 and is divisible by 4.

b) I am a number between 50 and 100. I am a perfect square and whose digits add to 10.

c) I am the smallest number who leaves remainder 2 when divided by 3, 4, and 5.

PART B (Project work)

Instructions:

- ❖ **Use eco - friendly materials only.**
- ❖ **Model should accompany a small write up on an A4 sized sheet which explains the concept and functioning of the model.**
- ❖ **Prepare a brief presentation of 1 minute to explain your model.**

- **Group 1 (Roll number 1 - 6) :**

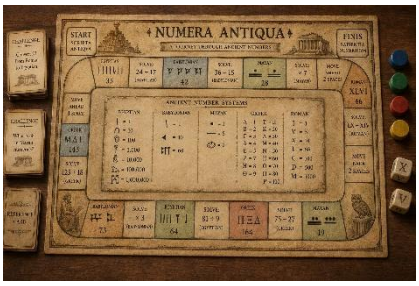
  Working Model: Rectangle to Cylinder

  Prepare a working model showing how a rectangle forms a cylinder on rotation using suitable materials.

- **Group 2 (Roll number 7 - 12) :**

  Story of Numbers: Board Game

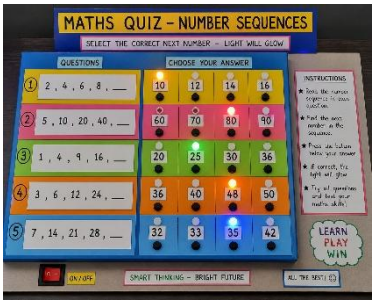
  Design a board game based on different number systems and their usage. Include rules, questions/challenges, and make it interactive and engaging.



- **Group 3 (Roll number 13 - 18) :**

  Quiz Model with Lights

  Create a quiz-based working model if possible using lights where students match correct answers to given questions (like complete the number sequences).



- **Group 4 (Roll number 19 - 24) :**

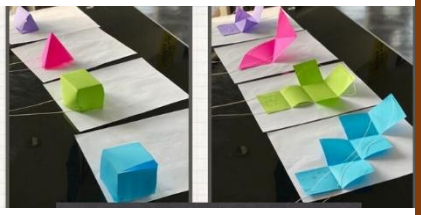
  Geometric City Model

  Design a "Geometric City" using different 2D and 3D shapes to represent buildings and structures. Label all shapes used and write a short explanation of their real-life use.

- **Group 5 (Roll number 24 – last)**

  Pull-Out Nets of Solids

  Make pull-out nets of at least 3 solids like cube, cuboid, or cylinder. Show how they fold into 3D shapes and label faces, edges, and vertices.



PART C (Suggested activities)

🌼 **Summer Enrichment Challenge**

Have you ever tried solving a Rubik's Cube? It is not just an interesting puzzle but a powerful way to train your brain. Learning to solve a Rubik's Cube helps improve memory, concentration, logical thinking, problem-solving skills, and hand–eye coordination.

🧩 **Along with this, make it a weekly habit to solve at least one puzzle (like a Sudoku or a Nonogram). These puzzles will keep your mind active and enhance your focus.**

- **Challenge yourself this summer vacation to learn how to solve a Rubik's Cube and complete one puzzle every week to stay engaged, sharp, and curious!**

- **Explore the home automation devices used in your house or nearby (such as smart lights, smart locks, or voice assistants like Amazon Echo or Google Nest Hub). Observe how they function and make daily tasks easier.**

Reference link:

https://youtu.be/7Ron6MN45LY?si=BtekxL4371q368T8

ENGLISH

INSTRUCTIONS:

- **Use decorated A-4/A-3 size sheets.**
- **Put them in a clear bag after stapling or use a file cover and punch the sheets in it.**
- **Do as instructed in the class.**

1. Convert any story from your MCB Chapters 1 to 6, into a comic strip. You can use A3 size sheet or Chart paper.
2. Read any one book from the list shared below.
    a) In 150 words write :
        i. What if the villain won?
        ii. What if the hero failed?
    b) Make a report about the same book include moral you learnt, any takeaways and character sketches of any two important characters.

c) Make a presentation in the class about the story you have read

- You can narrate the story in your own words using puppets/ pictures/cut-outs.
- Use puppets/ pictures to tell about characters.
- Do a role play with the help of your friend.

List of Books:

1) Treasure Island
2) Robin Hood
3) Narnia: The Lion, the Witch and the Wardrobe
4) Sherlock Holmes Stories
5) Oliver Twist

3. Do the following questions in your Assignment notebook.

I. You are Ajay/Arunima. You are concerned about the poor condition of roads in your locality. Write a letter to the editor of a newspaper to bring this issue to the authorities' notice.

Hints

- Objectives
- Impact
- Preventive Measures
- Suggestions

II. Cyber Crime is a great problem for modern world. Write an article in 100 to 120 words on this topic, using the hints given below.

हिंदी

प्रिय छात्रों, ग्रीष्मावकाश आनंद, सीखने, रचनात्मकता और परिवार के साथ मधुर समय बिताने का अवसर है। इस अवकाश में आप खेलें, पढ़ें, नई बातें सीखें और अपने अनुभवों को शब्दों में व्यक्त करें। आपके लिए कुछ रोचक, ज्ञानवर्धक और रचनात्मक गतिविधियाँ दी जा रही हैं। इन्हें सुंदर लेख में पूर्ण करके विद्यालय खुलने पर अवश्य लाएँ। अभिभावकों से विनम्र अनुरोध है कि वे बच्चों को स्वाध्याय, पठन-पाठन, रचनात्मक गतिविधियों तथा पारिवारिक संवाद के लिए प्रेरित करें। कृपया बच्चों को अपने मार्गदर्शन में कार्य पूर्ण करने में सहयोग प्रदान करें।

1. इस गर्मी की छुट्टी में जब आप दिल्ली से बाहर या दिल्ली में ही भ्रमण (घूमने) पर गए, तो आपने रास्ते में, बाज़ार में या किसी पर्यटन स्थल पर कुछ ऐसे बच्चों को देखा होगा जो स्कूल जाने के बजाय काम कर रहे थे या जिन्हें बुनियादी सुविधाएँ नहीं मिल रही थीं। उस दृश्य को देखकर आपके मन में क्या विचार आए? एक छात्र के रूप में, आप अपने स्तर पर ऐसे बच्चों के जीवन को बेहतर बनाने या उन्हें कुछ नया सिखाने के लिए क्या छोटा सा योगदान दे सकते हैं? अपने अनुभवों को विस्तार से लिखिए।

2. मान लीजिए हरिद्वार में गंगा नदी के घाट पर आपके सामने कुछ श्रद्धालु प्लास्टिक की थैलियों में भरकर फूल-माला और अन्य पूजा सामग्री सीधे गंगा जी में फेंक रहे हैं। आप उन श्रद्धालुओं की धार्मिक भावनाओं को ठेस पहुँचाए बिना, आदरपूर्वक उन्हें इस गंदगी को रोकने के लिए क्या समझाएँगे? संवाद के रूप में लिखिए।

3. अपने आसपास की किसी नर्सरी या उपजाऊ जगह और घर के बाहर/सड़क किनारे की मिट्टी को ध्यान से देखिए। दोनों जगहों से थोड़ी-थोड़ी मिट्टी लेकर उसके रंग, नमी, बनावट और उसमें छोटे जीव (जैसे केंचुए) देखें। इस आधार पर बताइए कि नर्सरी/उपजाऊ मिट्टी और सामान्य शहरी मिट्टी में उर्वरता, पोषक तत्व, नमी और देखभाल के आधार पर क्या अंतर है? साथ ही बताएं कि नर्सरी में पौधे अधिक स्वस्थ और जल्दी क्यों बढ़ते हैं।

4. कल्पना कीजिए कि आपको अपने जीवन में सही मार्गदर्शन के साथ पूरी स्वतंत्रता मिलती है। ऐसी स्थिति में आपके सोचने-समझने, भावनाओं और शरीर के विकास पर क्या अच्छा प्रभाव पड़ता है?

5. अपने अनुभव और विचारों के आधार पर लिखिए और साथ ही बताइए कि बच्चों के अच्छे विकास के लिए आज़ादी क्यों जरूरी है और इसे सही तरीके से बनाए रखने में परिवार और समाज की क्या भूमिका होनी चाहिए।

6. आज के आधुनिक युग में बदलती कृषि तकनीकों को समझते हुए एक ही सब्जी के दो रूपों, हाइड्रोपोनिक्स (बिना मिट्टी) और पारंपरिक खेती का स्वाद अनुभव कीजिए। बताइए कि दोनों के स्वाद, ताजगी और गुणवत्ता में क्या अंतर महसूस हुआ? आपको कौन-सी अधिक पसंद आई और क्यों?

विशेष निर्देश : हाइड्रोपोनिक्स फार्म संचालक या पौधशाला (नर्सरी) के कर्मचारी से बातचीत कर यह जानिए कि

- बिना मिट्टी के पौधे कैसे खड़े रहते हैं,
- पोषक घोल में कौन-कौन से तत्व होते हैं,
- और अंतरिक्ष में इस तकनीक का उपयोग क्यों आसान है।

अपने निष्कर्ष संक्षेप में प्रस्तुत कीजिए।

SOCIAL SCIENCE

1. Project on "The Parliamentary System – Be the Voice of Democracy"
Individual work for all)
Objectives:
To understand the structure and functioning of Parliament
To experience how laws are debated and passed
To develop critical thinking, decision-making, and communication skills
Your mission:
You are now a Member of Parliament (MP)
Create a project where you design, debate, and pass your own law based on a real-life issue (school, environment, society).

👉 Your project should feel like a mini-Parliament simulation, not just theory.

Sections to Include:

- Introduction: Your Identity as an MP, Mention your constituency and issue of concern
  Add a badge or ID card
- Structure of Parliament (Interactive Layout): Lok Sabha, Rajya Sabha, President
  👉 Present as: A layered foldable diagram OR A "Who's Who" card system
- My Bill (Core Innovation Section): Name your bill (e.g., Clean School Campaign Bill), Why is it needed?, Who will benefit?
  👉 Write like a real proposal (3–4 point)
- Law-Making Process (Live Simulation):
  Steps: Bill → Discussion → Voting → Approval
  👉 Show using: Flowchart + mini voting slips (Yes/No)
- Debate Zone (Critical Thinking Section): Arguments in favour of your bill, Arguments against your bill
  👉 Present as: Speech bubbles or dialogue format
- Final Decision (Outcome Page): Was your bill passed or rejected? Why?
  👉 Add a stamp: PASSED / REJECTED
- Conclusion: What did you learn about democracy?, Why is discussion important before making laws?

Creative Additions (Compulsory): MP ID card or badge, Foldable Parliament model or seating chart, Voting slips / ballot box (paper), Speech bubbles / debate cards

Presentation: A4 or scrapbook style, creative headings, neat writing, and relevant pictures/charts.

Rubrics: Content, Creativity, Presentation and Punctuality.

2. 3D MODEL Making (GROUP WORK): Let Your Ideas Take Shape!
(According to Roll No.)
Create a 3D eco-friendly model that shows how India changed during colonial rule—from arrival of traders to control by the British.
Your model should tell a story in stages, not just show objects.

Objective:
To understand how British rule expanded in India
To visualise the economic and social changes during colonial rule
To develop creativity and model-making skills
To connect historical concepts with real-life representation

Group 1
Roll Numbers 1 to 6
Include 3 sections:

👉 Create a **3D model** Arrival of Europeans (Beginning Zone)

👉 Show:

- Ships arriving at Indian ports
- Trading posts/factories

Group 2
Roll No.:7 – 12

👉 Create a **3D model of Expansion of British Power (Control Zone)**

👉 Show:

- East India Company officials
- Forts or administrative buildings

Group 3
Roll No.: 13 – 18

👉 Create a 3D model Impact on India (Life Zone)

Divide into two parts:
Before: Prosperous farmers/artisans
After: Tax burden, decline of crafts

👉 Show: Show contrast clearly (before vs after)

Group 4
Roll No.: 19 – 24

👉 Create a **3D Resistance Zone (Struggle Section)**

👉 Show:

People protesting
Early revolts or dissatisfaction

👉 Add small placards or slogans

Group 5
Roll No.: 25 – 30

👉 Create a **3D model Timeline Strip (Important Feature)**

👉 Show: Add a side strip showing key stages:
Trade → Expansion → Control → Impact → Resistance

Creative Features (Make it Unique):

- Use labels, arrows, and captions to explain each part
- Add moving/flap elements (e.g., lift to show "before–after")
- Create mini human figures using clay/paper
- Use colour contrast to show change

🎤 **Presentation (Very Important):**

Be ready to explain:

- What your model shows
- How British rule expanded
- Its impact on Indian people

Rubrics: Content, Creativity, Presentation and Punctuality.

3. Individual Work:
Each child would make and bring Four Artefacts:
One Artefact from China, one artefact from Taiwan, one artefact from Sri Lanka and one artefact from India. Each Artefact should be made with creativity, innovation and relevance to any festival from China and Taiwan.

(Example: Red Envelope, Qingming Kite, Sky Lantern, Paper Boat, Diya, Deepavali Kolam Board, Double Ten Flag)

Holidays Homework Submission Guidelines:

- **Last Date: 03.07.2026**
- **Label everything clearly with Name, Roll Number, and Topic**
- **All written work must be in your own handwriting—neat and expressive.**
- **Models should be light, durable, easy to carry and facilitate skill building.**
- **Take care of cleanliness, originality, and eco-friendly material use.**

SCIENCE

1. Prepare two beautiful Recipe cards for any two nutritive global dishes as given below. Write the ingredients, method of preparation, the nutritive value of the recipe taken and the picture of the dish on the card. Use any light colour A4 size pastel sheets.
   - Recipe of any two dishes of **India** (Roll No- 1-7)
   - Recipe of any two dishes of **South Korea** (Roll No- 8-14)
   - Recipe of any two dishes of **China** (Roll No- 15-21)
   - Recipe of any two dishes of **Sri Lanka** (Roll No- 22 0nwards)
   - Make a Chart on health and nutrition including a quote.

2. Model making is an Art and science of creating and turning abstract concepts into 3D reality. You have to make model on the given topics as per your roll number using eco-friendly material. The model should be properly labelled.
   - Space a fascinating world (Roll No. 1-10)
   - Water Conservation system (Roll No. 11-20)
   - Any two microbes (Roll No. 21 onwards)

3. Our environment is our lifeline. It is our prime responsibility to save it and to conserve it. To spread awareness, you are supposed to do the following activities as per the topic given roll number wise:
   - Write a slogan and also make a colourful poster each on A-3 sheet. The sheet must have a border and it should be beautifully presented.

   (a) Ban on Single use plastic (Roll No. 1-6)
   (b) Health with physical activities (Roll No. 7-12)
   (c) Air and water pollution (Roll No. 13-18)
   (d) Malnutrition and health issues (Roll No. 18 onwards)

ART AND CRAFT

Dear Parents,

Students are required to create a painting on the theme **"Dharohar (Heritage)"**, focusing on a famous temple of India. The artwork should reflect the beauty, cultural significance, and architectural details of the chosen temple.

Students may take inspiration from temples such as Konark Sun Temple, Meenakshi Temple, Kedarnath Temple, or any other well-known temple of India.

📄 Size: A3 (Cartridge Sheet / Ivory Sheet)

🎨 Colour Medium: Any suitable colour medium

This homework is mandatory for all students.

COMPUTER SCIENCE / ARTIFICIAL INTELLIGENCE

Students are required to prepare a model or working model (working models will be appreciated) based on the theme "Smart City."The model should be innovative and creative, and should demonstrate the use of modern technology such as AI, sensors, automation, or other smart systems.

Students may use materials such as cardboard, LEDs, motors, batteries, sensors, Arduino(optional), charts, thermocol, etc.

Topics Allotted According to Roll Numbers

Roll No. 1–10

Smart Police & Cyber Cell System for a Safe Digital Smart City

Roll No. 11–20

Smart Home

Roll No. 21 Onwards

Smart Traffic Control System

Instructions

- The model must be neat, labelled, and functional.
- Students should prepare a short explanation of the working of the model.
- Creativity and innovation will be appreciated.
- Use eco-friendly and reusable materials wherever possible

AI-Based Holiday Homework Topics

1. Create Instrumental Music Using an AI Tool (R.No 1 to 5)

Explore an AI music generator and compose a short tune or melody.

2. Design an AI-Generated Poster (R.No. 6 to 10)

Use an AI image tool to create a poster on Topic Ethical use of AI theme.

3. AI Story Generator Activity (R.No. 11 to 15)(using scratch Topic: Why AI is important)

Use an AI tool to generate a short story and illustrate it creatively.

4. Make an AI-Based Presentation (R.No. 16 to 20) (AI in real World)

Create a presentation on "Future of AI" using AI presentation tools.

5. Create Digital Art Using AI (R.No. 21 to 25)(Responsible use of AI)

Generate artwork using an AI image creator and explain the prompts used.

6. Create an AI Advertisement (R. No. 26 onwards)(Make advertisement of MSMS)

Design a product advertisement using AI-generated text and images.

A Square and a Cube

1. In the following grid, all the circles follow the same theme. What will be the value of A + B?

a) 12 b) 14 c) 13 d) 15

2. Sam writes a list of natural numbers. The list has three perfect cubes and three perfect squares. If no number in the list has more than two digits, what is the MINIMUM number of distinct numbers he must have written?

a) 3 b) 4 c) 5 d) 6

3. If AB is a two-digit number whose cube is in the form of a 4-digit number "C" such that

A < C < B, how many different values can C have?

a) 2 b) 3 c) 4 d) More than 4

4. 56 × k is a perfect cube where k is a natural number. What could be the smallest possible value of k?

a) 36 b) 49 c) 56 d) 72

5. Each geometrical shape denotes a certain operation. What will come in place of "?"

a) 2888 b) 1914 c) 1924 d) 340

6. XYZ is a 3-digit number such that it is the square of a multiple of 5. What will be the HIGHEST possible remainder of (XYZ)/100?

a) 10 b) 15 c) 20 d) 25

7. A class teacher wrote the following pattern on the board, where an expression is written after the "=" sign in each row. She then asked the class to find the expression for 133 - 123. Which DIGIT appears the HIGHEST number of times in the expression that denotes 133 - 123?

a) 1 b) 2 c) 3 d) 4

8. Fill in the grid with the squares and cubes of digits 2 to 5 such that:

- Each square/cube number appears twice
- Both square and cube of the same number cannot appear in the same row/column
- Same numbers do not appear diagonally

What is the maximum possible sum that can be obtained by the cells present in the configuration of Shape A (without rotation)?

a) 197 b) 161 c) 193 d) 216

9. The image below shows a logic machine, where numbers move from Column to Column (starting from column 1 as input and reach column 4) through the tunnel, where they change in a different way, each time. What would be the sum of A, B, and C?

a) 2259 b) 1795 c) 180 d) 1788

10. Every column follows a certain rule. What number should come in place of "?"

a) 17 b) 18 c) 19 d) 21