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SUMMER HOLIDAY HOMEWORK- 2025

CLASS : IX

Subject: Mathematics

I. **Choose the correct option:**

1) The rational number not lying between $\dfrac{3}{5}$ and $\dfrac{2}{3}$ is

$(A)\dfrac{49}{75}$ $(B)\dfrac{50}{75}$

$(C)\dfrac{47}{75}$ $(D)\dfrac{46}{75}$

2)The sum of rational and an irrational number

(i) may be natural(ii) may be irrational

(iii) is always irrational(iv) is always rational

3)0.83458456……………is

(i) an irrational number(ii) rational number

(iii) a natural number(iv) a whole number.

4)The simplest form of $\sqrt{600}$ is

$(A)10\sqrt{60}$ $(B)100\sqrt{6}$

$(C)20\sqrt{3}$ $(D)10\sqrt{6}$

5)A polynomial of degree 3 in x has at most

(a) 5 terms(b) 3 terms   (c) 4 terms(d) 1 term

II. Solve the following problems:

1) Show that √3 is an irrational number.
2) Simplify: (√5 + √2)(√5 - √2).
3) Express 1.272727… in the form p/q.
4) Find the square root of 0.0081.
5) Represent √9.3 on the number line (explain the method).

III. Solve the following:

1) Locate √3 on the number line.
2) Rationalize the denominator:
   a) $1 / (√7 - √5)$
   b) $1 / (2 + √3)$
3) Represent √5 on the number line using the spiral method.
4) Find 3 rational numbers and 2 irrational numbers between √2 and √3.

IV. Solve the following:

1) a) Define polynomial. Give an example of a polynomial in one variable of degree 4.
   b) Is $2x^3-3x+1$ a polynomial? Why or why not?

   i) Add: $2x^2+3x-5$ and $x^2 + 4x + 1$

   Ii) Multiply: (x+3)(x−2)

   Iii) Find the product: $(2x-1)(x^2+x+1)$

3) Find the value of $p(x)=2x^2-3x+1$ at x=−1
4) Find the degree, coefficient of x² and constant term in the polynomial: $5x^3-3x^2+7x-25$

V. Case Based questions:

Case Study 1: Rational and Irrational Numbers

Case: Ravi and Riya were discussing the number system. Ravi said that the square root of 2 is a rational number, while Riya disagreed and said it is irrational. To settle the debate, they approached their teacher, who explained the properties of rational and irrational numbers using examples like √2, 22/7, 0.333..., and π.

1. Is √2 a rational number? Why or why not?

2.   Classify the following numbers as rational or irrational:
        a) 22/7
        b) 0.333...
        c) π
3.   Which of the following numbers is **non-terminating and non-repeating**:
        a) 3.14
        b) √2
        c) 7/8
4.   What is the decimal expansion of a rational number like 1/3?

Subject-science

Instructions:Do questions in your holiday homework notebook of science from question (1-11)

Q1.When a gas jar full of air is placed upside down on a gas jar full of bromine vapours, the red-brown vapours of bromine from the lower jar go upward into the jar containing air. In this experiment:

(a) Air is heavier than bromine

(b) Both air and bromine have the same density

(c) Bromine is heavier than air

(d) Bromine cannot be heavier than air because it is going upwards against gravity

Q2. A form of matter has no fixed shape but it has a fixed volume. An example of this form of matter is

(a) Krypton.   (b) Kerosene.   (c) Carbon steel.   (d) Carbon dioxide

Q3.Which one of the following statements is not true?

(a) The molecules in a solid vibrate about a fixed position

(b) The molecules in a liquid are arranged in a regular pattern

(c) The molecules in a gas exert negligibly small forces on each other, except during collisions

(d) The molecules of a gas occupy all the space available.

Q4.When water at 0°C freezes to form ice at the same temperature of 0°C, then it:

(a) Absorbs some heat

(b) Releases some heat

(c) Neither absorbs nor releases heat

(d) Absorbs exactly 3.34 x 105J/kg of heat

Q5.Which of the following properties does not describe a compound?

(a) It is composed of two or more elements

(b) It is a pure substance.

(c) It cannot be separated into constituents by physical means

(d) It is mixed in any proportion by mass

Q5.. In the tincture of iodine, find the solute and solvent?

(a) alcohol is the solute and iodine is the solvent

(b) iodine is the solute and alcohol is the solvent

(c) any component can be considered as solute or solvent

(d) tincture of iodine is not a solution

Q6.Pressure and temperature determine the state of a substance. Explain this in detail.
Q7.Explain giving examples the various factors on which rate of evaporation depends.

Q8.What would you observe when

(a) a saturated solution of potassium prepared at 60°C is allowed to cool to room temperature.

(b) an aqueous sugar solution is heated to dryness.

(c) a mixture of iron filings and sulphur powder is heated strongly.

Q9.Assertion: Sugar and Salt both are easily dissolved in water.
Reason: Sugar and Salt are solid hence it is easily dissolved in water.

Q10.Assertion: When sugar pour in water, then taste of water became a sweet.
Reason: sugar completely dissolved in water with giving its own character.

Q11. Prepare a model to demonstrate movement of particles in solid ,liquid and gases.

Q12. Prepare a model of animal cell and plant cell by using the clay.

Q13. Draw a flow chart of common methods of transmission of disease that may spread from an infected person to healthy person with examples on chart paper.

Q14. Do previous year questions of chapter-1and chapter -2 in your homework notebook (last 5yr)

Q15.Do Revision of ch-1 and ch-2 thoroughly.

Subject: Social science

1)Describe causes for French Revolution

2)Write the impact of French Revolution

3)When did French Revolution begin

4)Explain the role of philosopher in French Revolution

5)Describe the social structure in the old regime in France

6)How did the ideas of Liberty equality and fraternity spread in France

7)Explain the role of women in French Revolution

8)What was the reason of terror who was robispeirre

9)What changes did Napoleon bring to France after revolution

10)Major cities in France involved in French Revolution

11)Locate and label the bastille prison and place of Versailles

12)Why is the time along the Standard Meridian of India taken at the standard time for whole country

13)What is the significance of India s Central location

14)Explain how the longitudinal and latitudinal extent of India influences its climate

15)Describe the geographical extent of India

16)Discuss the strategy importance of India location at the head of the Indian Ocean

17)It's when how India size and location have helped established relation with other countries

18)Compare India's geographical size with any two other countries

19)Mark the following on the outline map of india

Tropic of Cancer 82 half East longitude southernmost point of India Indira Point

20)Read the following chapters and write down the important points

 physical features of India

what is democracy

why democracy

 constitutional design

the story of Palampur

Subject : ENGLISH

1) Imagine you are Nanda/Neha, Vasundara complex, Green Valley City, Mumbai. Write a letter to your Grandmother regarding your Kho Kho experience, a winning team which held in Bengaluru at Regional level.

2) India represents a harmonious oneness in spite of distinctions , using the given clues along with your own ideas, write a Paragraph on `National Integration', in 200 words for your school magazine on "The Importance of Diversified Culture.'

*India a land embracing many cultures

*India-festivals dedicated to seasons and harvests

*India-multitude of castes, creed, colour, convictions, culture, cuisines, costumes and customs

*India-national festivals -pride, sense of patriotism promote national integration

3)You are Rohan, the Cultural Secretary of Netaji High School, Guwahati. Write a **notice** for your school notice board informing the students about a debate competition to be held in your school in not more than 50 words. Include all necessary information.

4) Dialogue Writing :

Sarita is being interviewed for the job of a teacher in a school. Complete the dialogue by filling in the gaps.

Interviewer: Why do you think you (i)................................. ?

Sarita: Ma'am, I am qualified for the job and I have a passion for children and teaching. All these traits make me suitable for the job.

Interviewer: Can (ii). language? ....……………..any foreign

Sarita: Yes, I can speak and write German.

Interviewer: What (iii)…………….....,……………………….graduation?

Sarita: Ma'am, I have graduated in Chemistry Honors.

Interviewer: Do you (iv)…………………………..experience?

Sarita: Yes, I have teaching experience of 5 years in a Shanthinikethan public school.

Interviewer: Well, then we may consider you for the job.

5) Write a character sketch on

a) Hooper

6) Answer the following in about 10 sentences each:

a) How does the story "How I Taught My Grandmother to Read" reflect the theme of love and respect for elders?

b) What is the central theme of the poem The Brook? How does the poet personify nature in the poem?

c) Can you describe the dog that lives near your house? What breed is it, what does it look like, and does it have any special behaviors or habits that you've notice.

d)"Explain how educating girls contributes to the betterment of their families and the overall development of the country. Provide **examples** to support your answer."

केन्द्रीय विद्यालय गौरीबिदनूर

कक्षा- नौवीं

ग्रीष्मावकाश गृह-कार्य

1- कबीर की साखियाँ लिखकर मात्रा-गणना कीजिए।

2- विद्यार्थी-जीवन में नैतिक-मूल्यों का विकास विषय पर दिए गए संकेत बिन्दुयोन के आधार पर एक अनुच्छेद लिखिए।

संकेत बिन्दु: 1- जीवन के महान मूल्य

2- शिक्षा का सही उद्देश्य

3- आंतरिक मूल्यों का विकास करना

4- समाज और मित्र-मंडली का प्रभाव

5- निष्कर्ष

3- संवाद-लेखन- घर की आर्थिक समस्या को लेकर पिता-पुत्र के बीच हुई बातचीत को संवाद के रूप में लिखिए।

SUBJECT : SANSKRIT

अवकाशकालीनगृहकार्यम् (व्याकरणपुस्तकम्)

1. धातुरुपाणिलिखत। (स्था, दृश्, चर्) (५ लाकर)
2. शब्दरूपाणिलिखत। किम् (३ लिंग)
3. संख्यावाचकशब्द: लिखत । (१-१००)
4. द्वेअनौपचारिकपत्रंलिखत ।
5. पञ्चचित्रम्दृष्टवापञ्चवाक्यानिलिखत। (चित्रम्रचयत)। A4 sheets

ARTIFICIAL INTELLIGENCE (CODE-417)

I Multiple Choice questions

Q1. Assertion (A): Artificial Intelligence can help improve learning in schools.
   Reason (R): AI can be used to punish students for late submission.

a. Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
c. Assertion (A) is true, but Reason (R) is false.
d. Assertion (A) is false, but Reason (R) is true.

Q2. Assertion (A): AI is designed to mimic human intelligence in tasks like problem-solving and decision-making.
Reason (R): AI systems are equipped with sensors and algorithms to process data and learn from it.

a. Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).

c. Assertion (A) is true, but Reason (R) is false.
d. Assertion (A) is false, but Reason (R) is true.

Q3. Which one of the following is an application of AI?
a. Remote controlled Drone
b. Self-Driving Car
c. Self-Service Kiosk
d. Self-Watering Plant System

Q4. This language is easy to learn and is one of the most popular languages for AI today:
a. C++
b. Python
c. Ruby
d. Java

Q5. This field is enabling computers to identify and process images as humans do:
a. Face Recognition
b. Model-view-controller
c. Computer Vision
d. Eye-in-Hand System

Q6. In a group discussion, effective communication means:
a. Dominating the conversation
b. Letting only the leader speak
c. Sharing ideas clearly and listening to others
d. Avoiding eye contact

Q7. Which of the following is not a domain of artificial intelligence?
a. Data Management System
b. Computer Vision
c. Natural Language Processing
d. Data Science

Q8. How excited are you about this AI curriculum?
a. Very Excited!
b. A bit excited
c. Same as always
d. Not excited at all

Q9. The '7Cs' of communication include:
a. Curiosity
b Clarity
c. Clumsiness
d. Cheating

Q10. Which of the following is the most effective way to show you are actively listening?
a. Checking your phone while someone talks
b. Nodding, making eye contact, and responding appropriately
c. Interrupting when you have a point
d. Looking around the room**.**

II Fill in the blanks

1. Artificial Intelligence refers to machines or systems that can _____, learn, and make decisions like humans.

2. _____ Learning is a method where AI systems learn from data without being explicitly programmed.

3. A common example of AI in daily life is a _____ assistant like Siri or Google Assistant.

4. AI systems use large sets of _____ to recognize patterns and make predictions.

5. One ethical concern in AI is _____, where the system might make unfair decisions based on biased data.

6. AI is already being used in _____ apps to suggest music, videos, and ads based on user behavior.

7. AI cannot replace human qualities like _____ and emotions.

8. Reflecting on AI helps students become _____ users and creators of technology.

9. One way to use AI in education is through _____ learning platforms that adapt to student performance.

10. AI works best when combined with _____ intelligence.

III Answer the following questions:

1. What is Artificial Intelligence (AI), and how is it different from human intelligence?

2. List any two real-life examples of AI that you use in daily life. Explain how they help you.

3. What are the different types of AI (Narrow, General, and Super AI)? Give one example of each.

4. You have a voice assistant like Alexa or Siri at home. What kind of AI features does it use?

5. Imagine your school uses an AI-based attendance system. What could be the benefits and challenges of this?

6. How can AI help in solving environmental problems like pollution or climate change?

7. Do you think AI can replace teachers in the future? Why or why not?

8. AI can make decisions faster than humans. Should we let AI make all important decisions? Explain with reasons.

9. What are some ethical concerns about AI (e.g., privacy, bias)? Suggest how these can be addressed.

10. After learning about AI, how do you think it will impact your future career?

11. Have you ever interacted with an AI and didn't realize it at first? Reflect on your experience.

12. What would you like to build using AI, and why?

13. Imagine your friend is upset, and you want to comfort them. How will you communicate effectively?

14. You are asked to give a short speech in the morning assembly. How will you prepare and communicate clearly?

NOTE:

1. The home work should be written on 100 pages king size note book.
2. Write the heading as Summer Holiday Home Work and the date is 2/5/2025
3. Write the index without fail and the book should be binded with brown wrapper.
4. The home work should be submitted on 23/6/2025 be all the students without fail