

SUMMER VACATION HOMEWORK FOR CLASS IX

SESSION 2021-2022

➤ MATHEMATICS

SUBJECT TEACHER- GITA SINGH AND DEEPMALA EKKA, TGT (MATHEMATICS)

CHAPTER-01 (Number System)

1. Express 0.14285142857..... in the form of $\frac{m}{n}$, and find the value of $(2m + n)$.
2. If $x = 1 + \sqrt{2}$, then find $\{x + 1/x\}^2$
3. Locate $\sqrt{2}$ on the number line.
4. Visualize the representation of 5.37 on the number line upto 4 decimal places i.e 5.3777.
5. Solve:- (i) $\sqrt[4]{\sqrt{22}}$ (ii) $((256)0.16 \times (256)0.09)$

CHAPTER-02 (Polynomials)

6. If $a + b + c = 9$ and $ab + bc + ca = 40$, then find the value of $(a^2 + b^2 + c^2)$?
7. Determine the degree of each of the following polynomials :-
i. $3x - 2$, (ii) -20 (iii) $x^3(2 - x^3)$
8. Find the value of k , if $(x - 1)$ is a factor of $4x^3 + 3x^2 + 4x + k$?
9. Factorise:- $2x^2 + y^2 + 8z^2 - 2\sqrt{2}xy + 4\sqrt{2}yz + 8xz$
10. Verify :- $x^3 + y^3 = (x + y)(x^2 - xy + y^2)$

ACTIVITY

1. To construct a square-root spiral
2. To verify the algebraic identity : $(a + b)^2 = a^2 + 2ab + b^2$
3. To verify the algebraic identity : $a^2 - b^2 = (a + b)(a - b)$

➤ SCIENCE

1. BIOLOGY (IXA)

1. Who discovered cells and how?
2. What are unicellular organisms? Give two examples.
3. Define multicellular organism with two examples?
4. Draw a labeled diagram of various cells of human body.
5. Define cell wall and its composition?
6. Difference between hypertonic & hypotonic solutions.
7. Explain isotonic solutions.
8. Why is plasma membrane called a selectively permeable membrane?
9. What is the control center of cell?
10. Define chromosome.
11. What is the function of Nucleus?
12. What is diffusion.
13. Define osmosis.
14. Draw a labeled diagram of plant cell
15. Draw a labeled diagram of animal cell.

BIOLOGY (IXB)

1. Draw a labeled diagram of prokaryotic cell?
2. What is diffusion with examples?
3. Explain cell theory?
4. Draw diagram of various cells from the human body?
5. Who discovered cells and how?
6. What is the structural and functional unit of life?
7. Why nucleus is called the control center of cells?
8. Why is the plasma membrane called a selectively permeable membrane?
9. Explain difference between unicellular & multicellular organism with suitable examples?
10. Explain structure of Nucleus?
11. What is eukaryotic cells with examples.
12. What is the difference between hypertonic & hypotonic solutions.
13. Define chromosome.
14. Draw a labeled diagram of plant cell?
15. Explain difference between Prokaryotic & Eukaryotic cell.

2. PHYSICS

1. Derive three equations of motion (thrice each) by graphical method .
2. Solve all the examples related to the topics taught in chapter eight of text book.
3. Solve all the questions given in exercises of chapter eight of text book

3. CHEMISTRY

1. Write Home assignment in HW notebook.
2. Write an Essay on the topic “ The contribution of Indian Scientist in The Field Of Science” (Minimum five pages, maximum ten pages)
3. Answer all intext and exercise questions given in chapter1 of NCERT textbook as given below.

1. Which of the following are matter?

Chair, air, love, smell, hate, almonds, thought, cold, lemon water, smell of perfume.

2. Give reasons for the following observation:

The smell of hot sizzling food reaches you several metres away, but to get the smell from cold food you have to go close.

3. A diver is able to cut through water in a swimming pool. Which property of matter does this observation show?

4. What are the characteristics of the particles of matter?

➤ **ENGLISH (IXA AND IXB)**

1. Complete question answer
2. One personal letter
3. Tense chart.
4. Summary: - The fun they had

➤ कक्षा :- नवमी

विषय :- हिंदी

1. वाक्य किसे कहते हैं? परिभाषा सहित उदाहरण लिखिये।
2. अर्थ के आधार पर वाक्य के कितने भेद होते हैं? लिखिये।
3. अर्थ के आधार पर वाक्य भेदों को दो-दो उदाहरण से समझाइये ।
4. समास किसे कहते हैं? परिभाषा लिखिये।
5. समास के विभिन्न प्रकारों को दो-दो उदाहरण देकर समझाइये ।
6. उपसर्ग किसे कहते हैं परिभाषा लिखकर 10 उदाहरण दिजिये।
7. प्रत्यय किसे कहते हैं ? परिभाषा लिखकर 10-10 उदाहरण लिखिये ।
8. कहानी में बैलों के माध्यम से कौन-कौन से नीति - विषय मूल्य उभरकर आए हैं?
9. काँजीहौस में पशुओं की हाज़री क्यों ली जाती होगी?
10. किन घटनाओं से पता चलता है कि हीरा और मोती में गहरी दोस्ती थी ।

*निर्देश:- परियोजना कार्य को फ़ाइल पेपर/ A4 साइज पेपर में लिखे।

1. स्वच्छता एवं स्वास्थ्य

➤ **Sub:-ART EDUCATION**

CLASS- 6 TO 10

H.w.- 05 PENCIL COLOUR SHADING/ CRAYONS/PASTEL COLOUR WORKS

Paper size:-A4/A3

