



# Alpine International School

## Session-2026-27



# Holiday Homework

*Dear Parents and students,*

*The most awaited vacation is about to begin!! As we step into the much-awaited summer vacation, I extend my warm wishes to each of you. This is a time to relax, rejuvenate, and spend quality moments with family, while also keeping the spark of learning alive. Summer vacation brings easy mornings, relaxing afternoons and playful evenings. It also brings a good time to plunge into the sea of imagination and creativity.*

*So let's get ready to learn something new every day.*

*To make your holidays both enjoyable and productive, our teachers have thoughtfully prepared Summer Vacation Homework.*

**IMPORTANT INSTRUCTIONS TO BE FOLLOWED:**

- 1. This holiday homework should be completed within the stipulated time i.e. latest by 20-06-2026.*
- 2. Try to complete the work by yourself with full creativity and enthusiasm.*
- 3. Do the entire homework in a copy with less pages or as instructed by your teachers.*
- 4. Your Handwriting should be neat and clean.*
- 5. Draw or paste pictures wherever asked or needed.*
- 6. You must design a front page subject wise containing all the details about you.*
- 7. This holiday homework is a part of your assessment and marks will be given on it.*

*These activities are designed to:*

*Strengthen concepts learned during the term*

*Encourage creativity and independent thinking*

*Foster healthy reading and writing habits*

*I encourage students to approach these tasks with curiosity and sincerity, without letting them overshadow the joy of the holidays. Parents are requested to guide and motivate their children, ensuring a balance between study, play, and rest.*

*Remember, learning is not confined to classrooms—it happens in conversations, in nature, in books, and in the little experiences of everyday life.*

*Let's be safe at home and enjoy with our parents and grandparents.*

*We look forward to seeing you refreshed and ready for the next educational journey.*

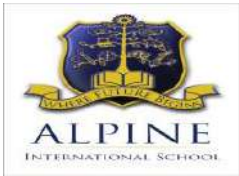
*For query contact at 7454900717, 7454900730*

*(Contact the class teachers or subject teachers for any confusion in Holiday Homework)*

*Warm regards,*

**NIRMALA MALIK**

**Principal**



# Alpine International School

Holiday Homework (2026-27)

**Class-X**

## ( Mathematics )

### A. Solve the following questions in your notebook

1. Find the HCF and LCM of 6, 72 and 120 using fundamental theorem of arithmetic.
2. Find the largest number that divides 2053 and 967 and leaves a remainder of 5 and 7 respectively.
3. Two numbers are in the ratio 21 : 17. If their HCF is 5, find the numbers.
4. Prove that  $\sqrt{5}$  is an irrational number.
5. Find HCF and LCM of 404 and 96 and verify that  $\text{HCF} \times \text{LCM} = \text{Product of the two given numbers}$
6. Given that  $\sqrt{2}$  is irrational, prove that  $(5 + 3\sqrt{2})$  is an irrational number.
7. (a) On a morning walk three persons step off together and their steps measure 40 cm, 42 cm, 45 cm, what is the minimum distance each should walk so that each can cover the same distance in complete steps?  
(b) There are 576 boys and 448 girls in a school that are to be divided into equal sections of either boys or girls alone. Find the total number of sections thus formed.
8. Find the zeroes of  $\sqrt{3}x^2 + 10x + 7\sqrt{3}$
9. Find a quadratic polynomial whose zeroes are  $-9$  and  $1/9$
10. If the sum of the zeroes of the quadratic polynomial  $ky^2 + 2y - 3k$  is equal to twice their product, find the value of  $k$ .
11. If the product of the zeroes of the polynomial  $ax^2 - 6x - 6$  is 4, then find the value of  $a$ . Also find the sum of zeroes of the polynomial.
12. Find the zeroes of  $p(x) = 4x^2 + 24x + 36$  quadratic polynomials and verify the relationship between the zeroes and their coefficients.
13. If  $\alpha$  and  $\beta$  are zeroes of the quadratic polynomial  $4x^2 + 4x + 1$ , then form a quadratic polynomial whose zeroes are  $2\alpha$  and  $2\beta$ .
14. If  $\alpha, \beta$  are zeros of quadratic polynomial  $2x^2 + 5x + k$ , find the value of  $k$  such that  $(\alpha + \beta)^2 - \alpha\beta = 24$ .
15. If  $\alpha, \beta$  are zeroes of polynomial  $p(x) = 5x^2 + 5x + 1$  then find the value of  
(i)  $\alpha^2 + \beta^2$  (ii)  $1/\alpha + 1/\beta$  (iii)  $\alpha^3 + \beta^3$

B. Read and practice yourself chapter 3,4,5,6,7 during summer holiday.

### C. Write any four projects out of given topic in maths activity copy elaborately with colourful work: ( Atleast 1000 )

#### Topic list

1. To develop Heron's formulae for area of a triangle.
2. Story of  $\pi$ .
3. Development of Number Systems with their needs.
4. Chronology of Indian Mathematicians with their contributions.
5. Chronological development of solution of a quadratic equations.
6. Development of Formula for the area of a cyclic quadrilateral.
7. Pythagoras Theorem-Proofs other than given in the present textbook.
8. Extensions of Pythagoras Theorem.
9. With rectangle of given perimeter finding the one with a maximum area and with rectangle of given area, finding the one with least perimeter.
10. Knowledge and classification of solid figures with respect to surface areas and volumes.
11. Sum of the exterior angles of a polygon taken in an order.
12. Generation of Pythagorean triplets.

13. Magic squares.
14. With cuboids of given surface area, finding the one with maximum volume and with cuboids of given volumes finding one with least surface area.
15. Mathematical designs and patterns.
16. Indian Mathematicians and their contributions.
17. To prepare a list of quotations on mathematics.
18. Ramanujan number (1729)
19. Mathematical Crosswords
20. Application of Geometry in day-to-day life
21. Application of Algebra in day-to-day life.
22. Application of Mensuration in day-to-day life.

**Do Maths lab manual activity in your lab manual.**

## Biology

1. Write and learn Question Answer in your biology notebook.

### **Multiple choice type questions**

1. During exhalation, the exchange of gases takes place between

- (a) Alveoli of the lungs and blood.
- (b) Alveoli of lungs and tissue fluid.
- (c) Blood and body tissues
- (d) Tissue fluid and blood capillaries

2. In human beings, when the process of digestion is completed, the (i) proteins, (ii) carbohydrate and (iii) fats are respectively finally converted into:

- (a) (i) Amino acids, (ii) glucose and (iii) fatty acids
- (b) (i) Amino acids, (ii) glucose, (iii) fatty acids and glycerol
- (c) (i) Glucose, (ii) fatty acids and glycerol, (iii) amino acids
- (d) (i) Sugars, (ii) amino acids, (iii) fatty acids and glycerol cells

3. In the excretory system of human beings, some substances in glucose, amino acids, salts and water are selectively reabsorbed in the

- (a) urethra (b) nephron (c) ureter (d) urinary bladder

4. The internal (cellular) energy reserve in autotrophs is

- (a) glycogen (b) protein (c) starch (d) fatty acid

5. Which of the following statement(s) is (are) true about human heart?

- (A) Right atrium receives oxygenated blood from lungs through pulmonary artery.
- (B) Left atrium transfers oxygenated blood to left ventricle which sends it to various parts of the body.
- (C) Right atrium receives deoxygenated blood through vena cava from upper and lower body.
- (D) Left atrium transfers oxygenated blood to aorta which sends it to different parts of the body.

- (a) (A). (b) (A) and (D) (c) (B) and (C) (d) (B) and (D)

6. The mode of nutrition found in fungi is:

- (a) Parasitic nutrition (b) Holozoic nutrition
- (c) Autotrophic nutrition (d) Saprotrophic nutrition

7. Which of the following events does NOT occur in photosynthesis?

- (a) Absorption of light energy by chlorophyll
- (b) Reduction of carbon dioxide to carbohydrates
- (c) Oxidation of carbon to carbon dioxide
- (d) Conversion of light energy to chemical energy

8. The internal (cellular) energy reserve in autotrophs is:

- (a) Glycogen (b) Protein (c) Starch (d) Fatty acid

9. The breakdown of pyruvate to give carbon dioxide, water, and energy takes place in:

- (a) Cytoplasm                      (b) Mitochondria                      (c) Chloroplast                      (d) Nucleus
10. When air is blown from the mouth into a test tube containing lime water, the lime water turns milky due to the presence of:
- (a) Oxygen                      (b) Carbon dioxide                      (c) Nitrogen                      (d) Water vapour
11. Which of the following is the correct sequence of air passage during inhalation?
- (a) Nostrils → Larynx → Pharynx → Trachea → Lungs  
 (b) Nasal passage → Trachea → Pharynx → Larynx → Alveoli  
 (c) Nostrils → Pharynx → Larynx → Trachea → Alveoli  
 (d) Nostrils → Alveoli → Vitreous humor → Larynx.
12. Which plant tissue transports water and minerals from the roots to the leaf?
- (a) Phloem                      (b) Parenchyma                      (c) Xylem                      (d) Collenchyma
13. The blood vessel which carries oxygenated blood from the lungs to the heart is:
- (a) Main artery (Aorta)                      (b) Pulmonary arter  
 (c) Pulmonary vein                      (d) Vena cava
14. The filtration units of kidneys are called:
- (a) Ureter                      (b) Urethra                      (c) Neurons                      (d) Nephrons
15. The process of digestion in humans is completed in
- a) Oesophagus                      b) small intestine                      c) stomach                      d) large intestine
16. Where are proteins first digested in the alimentary canal?
- (a) Small intestine                      (b) Oesophagus                      (c) mouth                      (d) stomach
17. Which of the following increases in muscle cells when they are lacking in oxygen?
- a) Carbon dioxide                      (b) lactose                      (c) lactic acid                      (d) uric acid
18. Coagulation of blood in a cut or wound is brought about by:
- a) Plasma                      (b) platelets                      (c) WBC                      (d) RBC
19. Which of the following plays the important role of creating a suction force which pulls water upwards from the roots of a tree to its leaves?
- (a) Gravitation                      (b) Transpiration                      (c) Respiration                      (d) Photosynthesis
20. In the excretory of human beings, some substances in the initial filtrate such as glucose, amino acids, salts and water are selectively reabsorbed in
- (a) urethra                      (b) nephron                      (c) ureter                      (d) urinary bladder
21. A few drops of iodine solution were added to rice water. The solution turned blue black colour. This indicates that rice water contains
- a) Complex proteins                      (b) Simple Proteins                      c) fats                      (d) Starch
22. Single circulation, i.e., blood flows through the heart only once during one cycle of through the body, is exhibited by
- (a) Labeo, Chameleon, Salamander                      (b) Hyla, Rana, Drace  
 (c) Hippocampus, Exocoetus, Anabas                      (d) Whale, Dolphin, Turtle
23. The opening and closing of the stomatal pore depends upon
- (a) oxygen                      (b) water in guard cells                      (c) temperature                      (d) concentration of CO<sub>2</sub> in stomata
24. The inner lining of stomach is protected by one of the following:  
 Choose the correct one.
- (a) Pepsin                      (b) Mucus                      (c) Salivary amylase                      (d) Bile

Very Short Answer Type Question:

25: What is the role of Acid (HCl) in our stomach?

Ans: It creates an acidic medium for the enzyme pepsin to act and also kills harmful bacteria that enter with food.

26. Name the site of photosynthesis in plants.

Ans: Chloroplasts, which contain the green pigment called chlorophyll.

27: Which enzyme is responsible for the digestion of starch in the mouth?

Ans. Salivary Amylase.

28: Name the pores through which leaf exchange of gases takes place.

29. Stomata.

30: What is the first step of the breakdown of glucose and where does it occur?

Ans: The breakdown of glucose into pyruvate occurs in the Cytoplasm.

31: Why does muscle cramping occur during sudden physical activity?

Ans. Due to the accumulation of lactic acid produced during anaerobic respiration in muscles.

32: Name the respiratory pigment in human beings.

Ans. Haemoglobin.

33: Name the tissue that transports water and minerals in plants.

Ans: Xylem.

35: Why is the separation of the right and left side of the heart useful?

Ans: It prevents the mixing of oxygenated and deoxygenated blood, allowing a highly efficient supply of oxygen to the body.

**Complete biology experiment in science lab Manual.**

## Physics

### **Complete lab manual**

Ex1. Verification of ohm's law

Ex2. Focal length of concave mirror

Ex3. Refraction through a rectangular glass slab.

Ex4. Image formation by a convex lens.

## Chemistry

1. To find out the pH of the following samples by using pH paper/Universal indicator.

i. Dilute Hydrochloric acid

ii. Dilute NaOH solution

iii. Dilute Ethanoic acid solution

iv. lemon Juice

v. Water

vi. Dilute Sodium Bicarbonate Solution

2. To study the properties of acids & bases (dilute HCl & dilute NaOH) by their reaction with

i. Litmus Solution (Blue/Red)

ii. Zinc metal

iii. Solid Sodium Carbonate

## English

Module 01 (Reading) → Worksheets: 2 to 11

Module 02 (Grammar) → Worksheets: 37, 38, 39

Module 03 (Writing Skills) → Worksheets: 57, 58, 59

## हिंदी

1- निम्नलिखित विषयों में से किसी एक विषय पर परियोजना हिन्दी परियोजना पुस्तिका (फाइल) तैयार कीजिए

**सूरदास**

\* संकेत बिंदु

\* प्रस्तावना

\* जन्म एवं प्रारंभिक जीवन

- |                |                                 |                    |
|----------------|---------------------------------|--------------------|
| * माता -पिता   | * शिक्षा और संघर्ष              | * साहित्यिक योगदान |
| * वैवाहिक जीवन | * प्रमुख रचनाएं                 | * भाषा शैली        |
| * मृत्यु       | * समाज सुधारक के रूप में भूमिका |                    |
| * निष्कर्ष     |                                 |                    |

### तुलसीदास

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|---------------------------|--------------------|---------------------------|
| * संकेत बिंदु             | * प्रस्तावना       | * जन्म एवं प्रारंभिक जीवन |
| * माता -पिता              | * शिक्षा और संघर्ष | * वैवाहिक जीवन            |
| * गुरु व इष्ट             | * विचारधारा        | * साहित्य योगदान          |
| * प्रमुख रचनाएं भाषा शैली | * मृत्यु           | * समाज पर प्रभाव          |
|                           |                    | * निष्कर्ष                |
- \* नोट- परियोजना फ़ाइल को आकर्षक बनाने के सुझाव
- 1-रंगीन पेन से शीर्षक लिखें
  - 2- संबंधित चित्र चिपकाएं
  - 3-हर पृष्ठ पर बॉर्डर बनाएं
  - 4- अंत में सीखी गई बातें लिखें।

## Information Technology

### ASSESSMENT

1. Define networking?
2. Give any three advantages of networking.
3. Explain transmission media and its types.
4. Compare Wifi with WiMax
5. Explain the following terms :
6. Explain P2P Architecture and how it is different from Client Server architecture?
7. What do you mean by instant messages?
8. What is a style ? Name some style categories.
9. What is a character style? How is it different from paragraph style ?
10. What is cropping ? How is it useful ?
11. What are templates ? What are the advantages of templates?
12. How will you set up the default templates in writer?
13. What is a table of contents? How is it useful?
14. What are the advantages and disadvantages of verbal communications?
15. What are the advantages and disadvantages of written communications?
16. What is the purpose of consolidating data in spreadsheet? Discuss briefly.
17. What is RDBMS?
18. What is database server? Explain Primary key and foreign key.
19. List and explain two common safety hazards in a workplace.
20. What causes eye strain and how to avoid it?

**Note: - Write answers only in computer Notebook.**

### Social Science

Project File Topic: Present Crisis of Petroleum and Natural Gas in the World

\*With Heading\*and Pictures

1. Introduction
2. Meaning of Petroleum and Natural Gas
3. Importance in Daily Life
4. Causes of Present Crisis
5. Major Petroleum
6. Producing Countries

7.Effects of Petroleum

8.Crisis

9.Impact on India

10.Environmental Problems

11.Renewable Energy Alternatives

12.Government Efforts

13.Conclusion

14.Bibliography



• *Happy* •

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SUMMER

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- *Holidays* -