Cadet College Muzaffarabad, AJ&K

Summer Vacation Work 2025

Class 10th

مطالعہ پاکستان

1۔ پاکستان بھارت حالیہ کشید گی کے پاکستانی معیشت پر اثرات (لکھ کر لانا ہے)۔

2۔ ایران اسرائیل جنگ میں مسلم ممالک اور یورپ کا کردار اور پاکستان پر اثرات مفصل لکھ کر لانا ہے۔

3۔ پہلے 2 باب یاد کر کے آنا ہے۔

فہیم القرآن

1۔ سبق نمبر۔1 المائدہ ایت نمبر 69 تا 103۔

2۔ سبق نمبر۔1 المائدہ ایت نمبر 104 تا 120

3۔ سبق نمبر۔2 سورۃ انعام ایت نمبر 1 تا 18٬

4۔ سبق نمبر۔2 سورۃ انعام ایت نمبر 19 تا 58

5۔ سبق نمبر۔2 سورۃ انعام ایت نمبر 95 تا 130

6۔ سبق نمبر۔2 سورۃ انعام ایت نمبر 131 تا 157

ترجمہ، MCQs، مختصر سوالات، تفصیلی سوالات سمیت جو کچھ پڑھا ہے یاد کر کے لانا ہے۔

اردو

سبق 1 تا 4 مشق لکھیں اور خلاصہ تحریر کریں۔

نظم 1 اور 2 کی تشریح کریں اور مرکزی خیال لکھیں۔

غزل 1 تا 2 کی مکمل تشریح کریں۔

حصہ گرائمر :

جملہ اسمیہ اور جملہ فعلیہ تحریری مشق کریں۔

خط اور درخواست کی تحریری مشق کریں۔

اصناف، نظم اور نثر کی تفہیم کے لیے ان کی تعریف کریں۔

محسن نقوی کی کتاب عذاب دید کا مطالعہ کرکے کم از کم 3 آزاد نظمیں اور 5 غزلیں یاد کریں۔

English

Essay writing	1. Information Technology 2. A visit to 200. 3. My Aim in life 4. Village life 5. Place of women in society 6. Pros and Cons of social Media
Pairs of words	A-G
Tense.	10 Sentence using each tense (12)
Punctuation Marks –(9)	
Summary Books Hunger	

Biology

Biology (10th)	Write answers of short questions of exercise from chapter 10, 11 & 14. Write MCQs of exercises from chapter 10, 11 & 14. Write 3 long questions marked in class from above mentioned chapters. Draw diagram of air passageway, excretory system, Nephron and Human Skelton.

Chemistry

1. 3D Model of an Atom Build atomic structures (like oxygen, carbon, etc.) using balls and sticks to show protons, neutrons, and electrons.

2. Periodic Table Model Create a 3D periodic table with color-coded groups and periods to show element classification.

3. Water Cycle Model (Chemistry Connection) Show evaporation, condensation, precipitation, and collection with chemical focus on water states.

4. Working Model of Electrolysis of Water Demonstrate how water splits into hydrogen and oxygen gases using simple materials.

5. Acid-Base Reaction Volcano Build a model volcano to show chemical reactions (baking soda + vinegar) creating gas release.

6. Crystallization Display Model Grow and display large salt or sugar crystals and explain the crystallization process.

7. Rusting of Iron Model Prepare a step-by-step display showing the stages of rust formation under different conditions.

8. States of Matter Model 3D models showing arrangement of particles in solids, liquids, and gases using balls and springs.

9. Distillation Model Build a simple working distillation setup using glass tubes, beakers, and a heat source to purify water.

10. Density Column Model Create a colorful layered liquid column to visually demonstrate the concept of density.

11. Preparation of Practical Note Book

12. Solve the Assignment/ Question Paper on loose sheets and submit it to the office by August 13, 2025.

(Mathematics)

Dear Cadets,

You are advised to prepare and understand all the following chapters thoroughly and solve the following questions on sheets properly.

Chapter 01

Short Questions

1. Write the following equation in standard form $\dfrac{x+3}{4x^2+1} + \dfrac{2}{x} = 5$

2. Solve by using quadratic formula $x^2 - \dfrac{4}{15}x - \dfrac{4}{15} = 0$

3. Solve the equation and write the solution without finding extraneous roots

   $\sqrt{x} + \sqrt{x+1} = \sqrt{2x+3}$

4. Solve by factorization $-3p^2 + 27p - 54 = 0$

5. What is zero factor property?

6. Solve the equation $3^{2x} - 10.3^x + 9 = 0$

7. Solve by competing square method $\dfrac{x}{x-6} = \dfrac{x-7}{3x-5}$

8. Write the following equation in standard form $\dfrac{x}{5} - \dfrac{2x+3}{x} = \dfrac{1}{x}$

9. Solve by using quadratic formula $3x^2 - 3x = -2$

10. Solve $x^2 + \dfrac{12}{x^2} = 8$

Long questions

1. Solve the equation and write the solution set without finding extraneous roots

$$\sqrt{x^2 + 2x + 1} + \sqrt{x^2 + 2x + 7} = 4$$

2. Solve the Equation $2^{x+3} - 2^{7-x} - 80 = 0$

3. Solve the equation and write the solution set without finding extraneous roots

$$\sqrt{x^2 + x + 2} + \sqrt{x^2 + x + 5} = 6$$

4. Solve the equation $2x^2 + 5x - 5x^{-1} + 2x^{-2} = 11$

5. Solve $x^2 + \dfrac{12}{x^2} = 8$

6. Solve the following and exclude the extraneous roots $\sqrt{x+2} = 3x + 4$

Chapter 02
Short Questions

1. Simplify $\left(-1 + \sqrt{3}i\right)^{10} + \left(-1 - \sqrt{3}i\right)^{10}$

2. Find the cube roots of -125

3. Find the value of ω^{521}

4. Prove that sum of roots of quadratic equation is $-\dfrac{b}{a}$

5. Without solving find the sum and roots of $5x^2 + 8x - 9 = 0$

6. Find the value of $\alpha^2 + \beta^2 + 2\alpha\beta$ if $\alpha = 3$ and $\beta = 4$

7. Form the equation whose roots are $1+i$ and $1-i$

8. Find the value of "t" if 1 is the zero of polynomial $3x^3 - (t+1)x^2 + x + 1$

9. Prove that sum of cube root of unity is Zero.

10. Reduce the power ω^{390} into $1, \omega, \omega^2$

Long questions

1. Show that $\dfrac{a+b\omega+c\omega^2}{b+c\omega+a\omega^2} + \dfrac{a+b\omega+c\omega^2}{c+a\omega+b\omega^2} = -1$

2. Find the value of k if the sum of the roots of the equation $3x^2 + kx + 9 = 0$ is equal to the 3 - times of the product of the roots.

3. Use synthetic division to find the value of p and q if $x-2$ and $x+1$ are the factors of the polynomial $P(x) = x^3 - (p+1)x^2 + qx + 4$

4. The numerator of a fraction is 1 less than its denominator, when both numerator and denominators are increased by 2. The fraction is increased by $\dfrac{1}{12}$ find the original fraction.

5. Show that the roots of the equation are real $(p-q)x^2 + (q-r)x + (r-p) = 0$

6. Find the quotient and remainder by synthetic division
$$(4x^4 - 6x^3 + 13x^2 - 2x + 19) \div (x+5)$$

7. Find two consecutive positive odd numbers. If the difference between their reciprocal is $\dfrac{2}{15}$

8. Find the cube root of 216

Chapter # 09

1. One and only one circle can pass through three non-collinear points.

2. A straight line drawn from center of circle to bisect a chord is perpendicular to the chord.

3. Perpendicular from the center of circle on a chord bisects it.

4. If two chords of circle are congruent then they will be equidistance from the center.

5. Two chords of circle which are equidistance from the center are congrurent.

Physics

Chapter No 1

Three long questions

(Mass, Spring System, Simple Pendulum, Damped Oscillation)

Selective Problems from Chapter No 1

Chapter No 2

All short questions form exercise

Chapter No 3 (Electrostatics)

All long questions (Coulomb's law, series and parallel combination, types of capacitors

Computer

1. Write an Algorithm to convert temp form Celsius to Fahrenheit.

2. Draw ERD to show list of odd no,s between 1 to 51.

3. Describe all data types used in C language.

4. Write C programs separately for printf(), scanf() , getche() and getche().

5. Draw tables for format specifier and escape sequences.