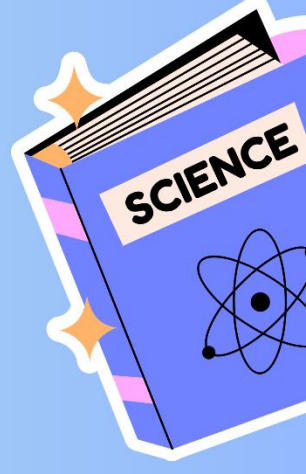




SUMMER HOLIDAY HOMEWORK (2026-2027)



Theme

**War & Peace: Global Conflicts
and Their Impact on Humanity**

ENGLISH

PHYSICS

CHEMISTRY

BIOLOGY

MATHS

SANSKRIT

HINDI



XI

**THEME - WAR & PEACE: GLOBAL CONFLICTS AND
THEIR IMPACT ON HUMANITY**

XI (SCIENCE)

SUMMER HOLIDAY HOMEWORK

2026-27

SUBJECT – ENGLISH

Instructions for summer holidays homework

- Write answers in essay form (120–150 words each) for all 5 questions.
- Use a neatly maintained file using A4 or A3 size papers; add charts/diagrams if relevant.
- Submit neatly written work on the first day after vacation; late submissions will not be accepted.
- Show originality, use real-life examples, and add creative elements where possible.
- Note: Revise and practice all classwork along with this homework.

SECTION: A - ADVANCED WRITING SKILLS

1. Notice Writing

You are the President of the International Youth Peace Club at Acharyakulam. Draft a formal notice for the school notice board inviting students from Classes IX–XII to volunteer and donate to a donation drive for children displaced by a recent global refugee crisis. (word limit: 50 words)

2. Article Writing

Write an analytical article for your upcoming school magazine titled: “**The Unseen Casualties: Why Diplomacy Must Always Precede Destruction.**” Focus on the economic, cultural, and human costs that ordinary civilians pay when leaders choose military conflict over dialogue. (word limit 120-150)

3. Write a formal letter to the Editor of a national newspaper detailing how integrating moral education and vocational skills into the modern curriculum can minimize socio-economic conflicts among youth. (word limit 120-150)

SECTION B: ACTIVITY-BASED QUESTIONS

4. Poster Analysis & Slogan Writing

Design an expressive, hand-drawn anti-war poster on an A4 sheet with the sub-theme: “**Building Bridges, Not Borders.**” Below your poster, write two creative slogans and a short paragraph explaining the core values your visual design intends to teach

SUBJECT - PHYSICS

For PCA and Non PCA Students

Task 1: Prepare an investigatory project on one of the following topics:

(Choose topic as per in accordance with your roll number starting from roll no. 1 and continue in cycle of 10 i.e., roll no 11,21,31 & 41 will do topic 1st.)

I. Nuclear Weapons & Radiation Effects

Investigate the physics of nuclear fission/fusion and analyse the long-term radiation impacts on human health and environment (e.g., Hiroshima, Chernobyl, Fukushima).

II. Physics of Explosions & Shock Waves

Study how shock waves propagate during bomb blasts, their destructive power, and compare with peaceful applications like seismic studies.

III. Electromagnetic Warfare vs. Communication for Peace

Explore how electromagnetic waves are used in radar, jamming, and military communication, versus their role in peaceful global connectivity (internet, satellites).

IV. Energy Resources in War & Peace

Compare how fossil fuels and renewable energy sources influence conflicts (oil wars) and peace-building (solar, wind, nuclear energy for electricity).

V. Space Technology: Militarization vs. Peaceful Exploration

Investigate satellite physics—how the same orbital mechanics serve both military surveillance and peaceful applications like weather forecasting and GPS.

VI. Medical Physics in War & Peace

Study how X-rays, ultrasound, and radiation therapy evolved from wartime innovations to peaceful healthcare applications.

VII. Sound & Silence: Acoustics in War & Peace

Analyse the physics of sound in warfare (sonic booms, explosions, psychological warfare) versus peaceful uses (music therapy, communication).

VIII. Thermal Physics: Firestorms vs. Sustainable Heating

Investigate how thermal energy is unleashed destructively in war (napalm, firebombing) versus constructive uses in peaceful energy-efficient housing.

IX. Lasers: Weapons vs. Healing Tools

Explore laser physics—military applications (laser-guided weapons, blinding devices) versus peaceful uses (eye surgery, fibre optics communication).

X. Climate Change & War: Physics of Environmental Stress

Study how war accelerates greenhouse gas emissions, deforestation, and pollution, versus peaceful technologies (carbon capture, renewable energy) that mitigate climate change.

Project Approach:-

- **Investigatory Style:** Each student should pick one topic, collect data (case studies, physics principles, humanitarian impacts), and present findings in a report or presentation.
- **Format:** Encourage modular presentation—charts, diagrams, comparative tables, and real-world examples.
- **Outcome:** Students will learn how physics principles can be double-edged—used destructively in war or constructively for peace.

Project Guidelines: -

1. Nuclear Weapons & Radiation Effects

- **Objective:** Understand nuclear fission/fusion and analyze radiation's impact on humans/environment.
- **Methodology:** Research Hiroshima/Nagasaki, Chernobyl, Fukushima; explain nuclear reactions with diagrams; collect data on radiation sickness.
- **Expected Outcome:** Comparative chart of destructive vs. peaceful nuclear applications (energy, medicine).
- **References:** Physics textbooks, IAEA reports, documentaries.

2. Physics of Explosions & Shock Waves

- **Objective:** Study shock wave propagation and destructive potential.

- **Methodology:** Use equations of pressure waves; compare bomb blasts with earthquakes; simulate with balloon bursts.
- **Expected Outcome:** Graphs showing energy release in war vs. natural events.
- **References:** Seismology journals, military physics case studies.

3. Electromagnetic Warfare vs. Communication for Peace

- **Objective:** Explore EM waves in radar/jamming vs. peaceful communication.
- **Methodology:** Explain wave propagation; case study of radar in WWII; compare with satellite internet.
- **Expected Outcome:** Table of military vs. civilian EM applications.
- **References:** Communication physics books, NASA satellite resources.

4. Energy Resources in War & Peace

- **Objective:** Compare fossil fuels and renewables in conflict and peace-building.
- **Methodology:** Research oil wars; analyze renewable energy's role in sustainable peace; energy efficiency calculations.
- **Expected Outcome:** Pie chart of energy sources in war vs. peace contexts.
- **References:** UN energy reports, physics of renewable energy.

5. Space Technology: Militarization vs. Peaceful Exploration

- **Objective:** Study orbital mechanics in military surveillance vs. peaceful exploration.
- **Methodology:** Explain Newton's laws in satellite motion; compare spy satellites vs. weather satellites.
- **Expected Outcome:** Comparative diagram of satellite uses.
- **References:** ISRO/NASA resources, space physics texts.

6. Medical Physics in War & Peace

- **Objective:** Trace wartime innovations in medical imaging to peaceful healthcare.
- **Methodology:** Research X-rays in WWI; ultrasound in modern hospitals; radiation therapy.
- **Expected Outcome:** Timeline chart of medical physics evolution.
- **References:** WHO medical physics resources, history of medicine.

7. Sound & Silence: Acoustics in War & Peace

- **Objective:** Analyze sound physics in warfare vs. peaceful uses.
- **Methodology:** Study sonic booms, explosions; compare with music therapy; measure decibel levels.

➤ **Expected Outcome:** Graph of sound intensity in war vs. peace.

➤ **References:** Acoustics textbooks, psychology of sound studies.

8. Thermal Physics: Firestorms vs. Sustainable Heating

➤ **Objective:** Investigate thermal energy in destructive vs. constructive contexts.

➤ **Methodology:** Study napalm/firebombing; compare with solar heating; calculate heat transfer.

➤ **Expected Outcome:** Energy balance chart of destructive vs. sustainable heating.

➤ **References:** Thermodynamics textbooks, renewable energy case studies.

9. Lasers: Weapons vs. Healing Tools

➤ **Objective:** Explore laser physics in military vs. medical applications.

➤ **Methodology:** Explain stimulated emission; research laser-guided weapons vs. LASIK surgery.

➤ **Expected Outcome:** Comparative table of destructive vs. healing uses.

➤ **References:** Optics textbooks, medical laser journals.

10. Climate Change & War: Physics of Environmental Stress

➤ **Objective:** Study war's impact on climate vs. peaceful mitigation technologies.

➤ **Methodology:** Research emissions during wars; compare with carbon capture/renewables; analyse greenhouse effect.

➤ **Expected Outcome:** Graph of CO₂ emissions in war vs. peace.

➤ **References:** IPCC reports, environmental physics resources.

<u>For NON-PCA Students only</u>

TASK 2: Write down the answer the following question

Solve the following questions in a separate note book-

1. P.A.M. Dirac, a great physicist of 20th century found that from the following basic constants, a number having dimensions of time can be constructed

i. charge on electron (e),

ii. permittivity of free space (ϵ_0),

iii. mass of electron (m_e),

iv. mass of proton (m_p)

- v. speed of light (c),
- vi. universal gravitational constant (G).

Obtain Dirac's number, given that the desired number is proportional to m_p^{-1} and m_e^{-2} . What is the significance of this number?

2. (a) It is known that the period T of a magnet of magnetic moment M vibrating in a uniform magnetic field of intensity B depends upon M , B and I where I is the moment of inertia of the magnet about its axis of oscillations.

Show that: $T = 2\pi \sqrt{\frac{I}{MB}}$

(b) Given that the time period T of oscillation of a gas bubble from an explosion under water depends upon P , d and E where P is the static pressure, d the density of water and E is the total energy of explosion, find dimensionally a relation for T .

3. If instead of mass, length and time as fundamental quantities, we choose velocity, acceleration and force as fundamental quantities and express their dimensions by V , A and F respectively, shows that the dimensions of Young's modulus can be expressed as $[FA^2V^{-4}]$.
4. (a) The orbital velocity v of a satellite may depend on its mass m , distance r from the centre of Earth and acceleration due to gravity g . Obtain an expression for orbital velocity.

(b) Given that the time period T of oscillation of a gas bubble from an explosion under water depends upon P , d and E where P is the static pressure, d the density of water and E is the total energy of explosion, find dimensionally a relation for T .

5. (a) A police van moving on a highway with a speed of 30 kmh^{-1} fires a bullet at a thief's car speeding away in the same direction with a speed of 192 kmh^{-1} . If the muzzle speed of the bullet is 150 ms^{-1} , with what speed does the bullet hit the thief's car? (Note: Obtain that speed which is relevant for damaging the thief's car).

(b) Deduce the expression for (a) time of flight (b) horizontal range (c) maximum height reached by a projectile, in terms of initial velocity and angle of projection.

6. (a) Can a body have a constant speed and still have a varying velocity?

(b) The position coordinate of a moving particle is given by $x=6+18t + 9t^2$ (Where x is in meters and t is in seconds) what is the velocity at $t=2$ second?

(c) Derive an equation for the distance travelled by a body moving with uniform acceleration during the n th second of its motion.

- (d) Is it possible to have a constant rate of change of velocity when velocity changes both in magnitude and direction? If yes, give one example.
7. Draw following graphs representing motion of an object under freefall neglect air resistance
- variation of position with respect to time
 - variation of velocity with respect to time
 - variation of acceleration with time
8. Water drops fall freely from a tap at a height of 4.9 m. If the time interval between successive drops is equal and the 4th drop is released when the first lands on the ground, find the separation between the second and third drops.
9. A player throws a ball upwards with an initial speed of 29.4ms^{-1}
- What is the direction of acceleration during the upward motion of the ball?
 - What are the velocity and acceleration of the ball at the highest point of its motion?
 - Choose the $x = 0$ m and $t = 0$ s to be the location and time of the ball at its highest point, vertically downward direction to be the positive direction of x-axis, and give the signs of position, velocity and acceleration of the ball during its upward, and downward motion.
10. (a) The sum & difference of two vectors are equal in magnitude. Mathematically prove that they are mutually perpendicular to each other.
- (b) Prove that the horizontal range is same when angle of projection is
- greater than 45° by a certain value and
 - less than 45° by the same value.
- (c) A man moving in rain holds his umbrella inclined to the vertical even though the rain drops are falling vertically downwards. Why?
- (d) Consider the x-axis as representing east, the y-axis as north and z-axis as vertically upwards. Give the vector representing each of the following points.
- 5 m north east and 2 m up
 - 4 m south east and 3 m up
 - 2 m north west and 4 m up
- (e) The resultant of two forces whose magnitudes are in the ratio 3:5 is 28 N. If the angle of their inclination is 60° , then find the magnitude of each force.

SUBJECT- CHEMISTRY

FOR PCA and Non PCA students both-

Task 1: Students will prepare an investigatory report on how chemistry has impacted war in positive and negative ways by discussing “**chemistry in war (The destructive force) and chemistry in peace (The constructive force)**”. You can explore following examples for preparing your report:

1. Reverting Industry - From explosives (TNT) to fertilizers.
2. Constructive and destructive application of Haber- Bosch process
3. The chemistry of chemical weapons (WWI AND WWII)
4. Nuclear energy Vs. Weapons
5. Effect of nuclear war on ozone and consequences

Project Structure:

1. Title Page – Chemistry in war and peace.
2. Certificate
3. Introduction – The duality of chemistry—how science can either save or destroy humanity.
4. Contents – Breakdown of chemical weapons vs. peaceful applications. The role of the organisation for the Prohibition of Chemical Weapons (OPCW)
5. Conclusion – A summary of how scientists must prioritize ethical uses of chemistry.
6. Bibliography – List your textbooks, encyclopaedias and websites.

Instructions for students

1. The project must be hand written on A4 size sheets.
2. The project should be 10 – 15 pages long.
3. Include pictures and reactions wherever relevant.
4. Use only blue and black pens.
5. This project would be assessed for the viva of final exam investigatory Project report.

For non-PCA students only:

Task 2: Worksheet

Write the answers of following questions in your chemistry class work note book after thorough reading of 'Structure of Atom' from NCERT text book:

1. What is the basic principle of a television picture tube or fluorescent light tubes?
2. Why did Rutherford choose gold for the alpha particle scattering experiment?
3. Which observation of Rutherford's experiment concludes that the nucleus has small volume?
4. When we heat an iron bar, it first becomes red, then yellow and finally begins to glow with white light and blue light. Why?
5. Plot a graph between
 - (a) K.E. of photoelectrons and intensity of incident radiation with constant frequency.
 - (b) Frequency of absorbed photons and K.E. of photoelectrons.
6. Calculate the wave number for the longest wavelength transition in the Balmer series of atomic hydrogen.
7. Derive Bohr's postulate of angular momentum from de Broglie equation.
8. Two particles A and B are in motion. If the wavelength associated with particle A is 5×10^{-8} m, Calculate the wavelength associated with particle B if its momentum is half of A.
9. Calculate the ratio of de Broglie wavelengths of carbon dioxide and ammonia molecules moving with equal velocity.
10. Calculate the ratio of atomic radii of 3rd excited states of He^+ ion and hydrogen atom.
11. The charge to mass ratio of the cathode ray particle is independent of the nature of gas while that of the anode ray particle depends on the nature of the gas. Explain.

Note: Students must revise and practice all the work completed in the class along with the above homework.

SUBJECT - BIOLOGY

Instructions for Students

1. Complete all the given tasks neatly on A4 size sheets only.
2. The work must be handwritten in clear and legible handwriting.
3. Mention the Topic and Task Number clearly on each sheet.
4. Arrange all sheets properly and submit them in a stick file/folder.
5. Write your Name, Class, Section, and Roll Number on the first page.
6. Students must revise and practice all the work completed in the class of Science along with the above homework

For NON PCA Students only

Task 1: Biological Weapons vs Biological Welfare:

Prepare a report (100-200 words) showing beneficial and harmful roles of bacteria, fungi, and viruses during conflict situations with examples.

Example:

- **Harmful:** Spread of epidemics, contaminated food and water
- **Beneficial:** Antibiotics, decomposition of waste, vaccine production

Task 2. Case study activity: Study one animal species affected by wars or habitat destruction and explain about- (word limit 150-200 words)

- Its Habitat
- Threat faced
- Conservation measures

Task 3: Collect and present the information neatly in tabular form (as given below) on five medicinal plants used for healing injuries and diseases during emergencies or wars. Information must include: Scientific name, uses and Part used –

S.No.	Common name of medicinal plant	Scientific Name	Uses	Part used
1				
2				
3				
4				
5				

For PCA AND NON PCA

Task 2: Investigatory Report Assignment

Prepare an investigatory report in Biology on the theme “**War & Peace: Global Conflicts and Their Impact on Humanity.**” The report should explain the biological, environmental, and health-related effects of wars and the importance of peace for sustainable human development.

The report must include the following subtopics:

1. Cover Page
2. Certificate
3. Acknowledgement
4. Index
5. Introduction to War and Peace
6. Meaning of Global Conflicts
7. Biological Impact of War on Human Health
8. Effect of War on Public Health Systems
9. Malnutrition and Starvation During Conflicts
10. Spread of Infectious Diseases in War-Affected Areas
11. Mental Health Effects of War (Stress, Trauma, PTSD, Depression)
12. Role of Biology, Medicine, and Healthcare During Wars
13. Any one Case Studies (Example: Hiroshima-Nagasaki, Refugee Camps, Epidemics During Wars, etc.)
14. Conclusion
15. Bibliography/References

SUBJECT: MATHEMATICS

CLASS: XI (NON- PCA) STUDENTS

General Instructions:

- Homework is divided in two sections A and B.
- Complete the homework in a separate note book/file, if graph or colored paper or any relevant material required then first make and paste it on with respective answers.
- For completion of your homework, you can use only A4 size rules or plain project files.
- Write your name, class, section, subject, date of submission and roll number on the cover page.
- Try to keep the work neat, clean and decorative and answer the questions exactly as asked.

Section-A (SET)

Q1. If U : Represents all countries in a region

Set P (Peace): Nations currently in a state of peace.

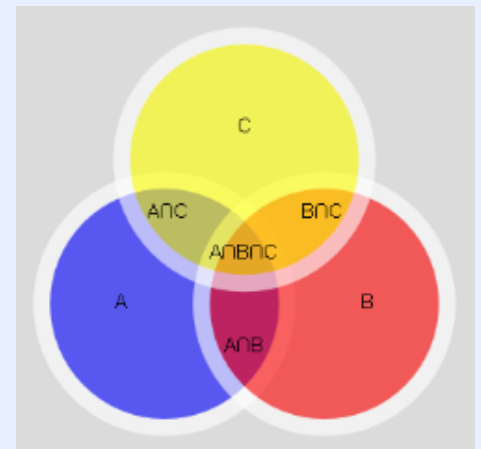
Set W (War): Nations currently in a state of war.

Explain the following operations regarding the set P and W :

(i) $P \cap W$ (ii) $P \cup W$ (iii) $P - W$ (iv) $P/$ or $W/$ (v) $W \subset U$

Q2. Scenario: Two rebel groups, (P) and (Q), operate in a region ($U = 100$ sq km).

- Group (P) controls 40 sq km.
 - Group (Q) controls 50 sq km.
 - The area of conflict (where they fight) is 15 sq km ($P \cap Q = 15$).
- a. What is the total area of war/territory occupied?
 - b. What is the area controlled exclusively by P ?
 - c. If they sign a peace treaty and stop fighting in the 15 sq km area, what is the new intersection?



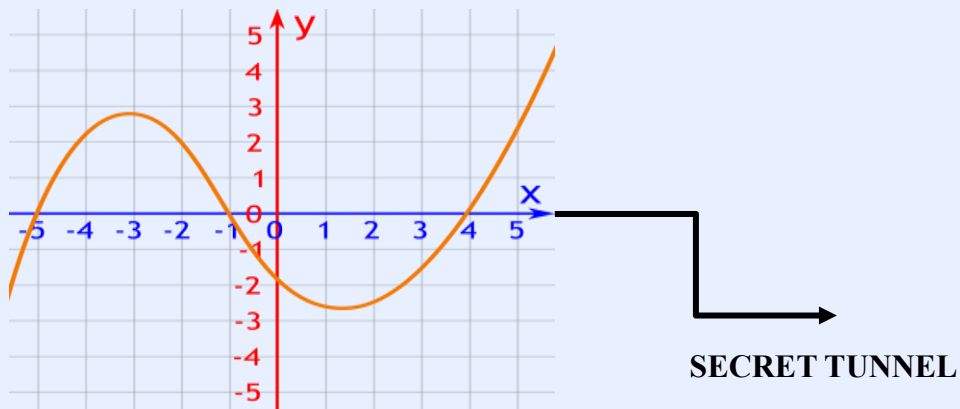
Q3. Out of 100 countries; 15 want peace (P), 12 want war(W), 8 in Liberty(L), 6 want P and W, 7 want W and L; 4 want P and L; 4 want all the three. Find how many wants:

- P and W but not in L
- W and L but not P
- P only

Q4. Make a Venn diagrams of given operation in Q1. with using colored pens:

- (i) $P \cup W$ / (ii) $(P \cup W) - (P \cap W)$ (iii) $P \cap W$ / (vi) $P \cap W$ /

Section-B (RELATION & FUNCTION)



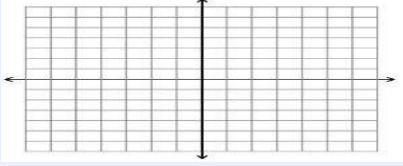
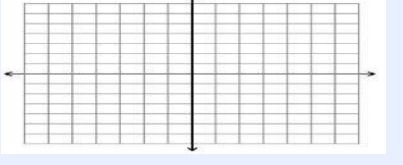
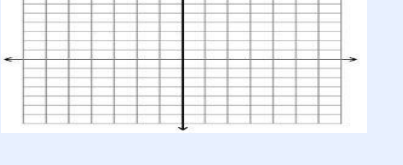
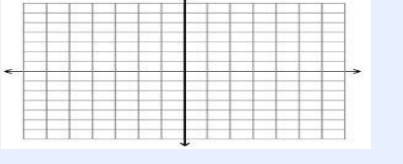
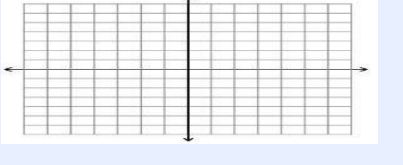
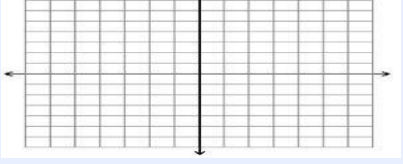
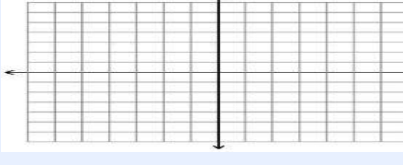
(Above Graph is cubic function $(x+5)(x+1)(x-4)$ which show a secret tunnel)

If India's defense chiefs so desire, certain secret tunnels which are based on graph of following functions could be constructed to connect frontline warriors across various locations; these tunnels would provide protection during heavy mortar fire or high-intensity shelling by the enemy: -

(Use the graph paper and paste it on HHW Note Book)

Q5. Draw the graph of following functions and show the domain and range limit.

f(x)	Domain	Range	Graph
$Y = x^3$			

f(x)	Domain	Range	Graph
$y= x - 3 $			
$y= x^2-x$			
$y=[x]$			
$y=\text{Sgn}(x)$			
$Y = 2^x$			
$Y = x + x - 1 $			
$Y = x - 2 + x + 2 ,$ $-3 \leq x \leq 3$			

Q6. On Indian Border (LOC) Army is set the landmines and explosives according the range limit of following function for safety purpose, so find the domain and range limits on LOC where landmines and explosives are arranged by $f(x)$:-

S.N.	$f(x)$	Domain	Range
i.	$f(x) = 2 - x - 5 $		
ii.	$F(x) = \frac{ x-3 }{x-3}$		
iii.	$f(x) = \frac{x^2}{1+x}$		
iv.	$f(x) = \sqrt{(25 - x^2)}$		
v.	$f(x) = \frac{3}{2-x^2}$		
vi.	$f(x) = \frac{1}{\sqrt{x-100}}$		
vii.	$f(x) = \sqrt{x - 3} + 1$		
viii.	$f(x) = \log(5 - 6x)$		-----
ix.	$f(x) = \sqrt{2 - x} + \frac{1}{\sqrt{x^2-1}}$		-----
x.	$f(x) = \frac{1}{\sqrt{x- x }}$		-----

Q7. Find secret code by communication between Raw Agents with solution of equations.(
Solve the equation and found secret code):

- i. $[x]^2 - 5[x] + 6 = 0$
- ii. $[x]^2 - 3[x] + 2 = 0$
- iii. $|2x - 3| - 1 = 0$



- iv. $2 \leq |x| \leq 3$
- v. $|x - 4| + |x - 3| = 3$
- vi. $|x - 1| < 3$
- vii. $\sqrt{3}x^2 - \sqrt{2}x + 3\sqrt{3} = 0.$
- viii. $x^2 - 2x - |x - 1| - 5 = 0$
- ix. $2x^2 + x + 1 = 0$ [Put $\sqrt{-1} = i, i$ is an imaginary root]
- x. $(x) -x^2 + x - 2 = 0$

Q8. Question based on type of relations:

(a) Define "Stable Peace" (Equivalence Relation)

A "Stable Peace" is a relationship that is reflexive, symmetric, and transitive. show that

$P = \{(1,1), (2,2), (3,3), (1,2), (2,1), (2,3), (3,2), (1,3), (3,1)\}$ is an equivalence relation.

(b) Identify the Empty and Universal relation with explanation:

(i) A scenario where no country is at war

(ii) A scenario where every country is at war with every other country including itself.

(c) Check that separately peace and war is reflexive, symmetric and transitive relation on set of some countries C:

(i) $aRb \Rightarrow$ Country a has peaceful relations with Country b

(ii) $aRb \Rightarrow$ Country a is at war with Country b

(d) If $A = \{\text{Russia, Armenia, Israel}\}$ $B = \{\text{Palestine, Ukraine, Azerbaijan, Lebanon}\}$ If R is relation from A to B such that $(a,b) \in R \Rightarrow$ Country a is at war with Country b, $a \in A, b \in B$ find that:

(i) R in roster form **(ii)** $n(AXB)$ **(iii)** $n(R)$ **(iv)** Show R by arrow diagram **(v)** Show R by table diagram **(vi)** Can R be one-one and onto justify.

Note: In addition to completing your homework, review and practice the portion of the syllabus that has already been covered in class; this is because these chapters will be included in the half-yearly examinations and are also interconnected with other chapters.

CLASS: XI (PCA) STUDENTS

Q1. If U: Represents all countries in a region

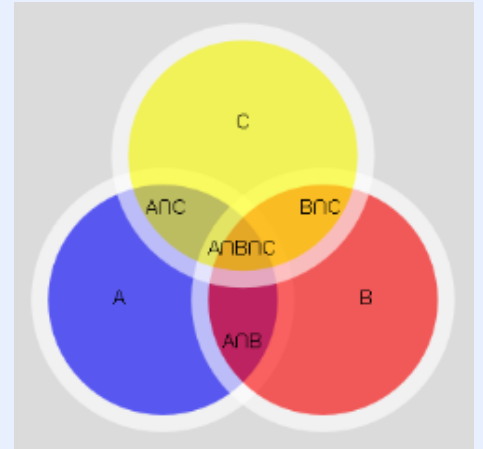
Set P(Peace): Nations currently in a state of peace.

Set W(War): Nations currently in a state of war.

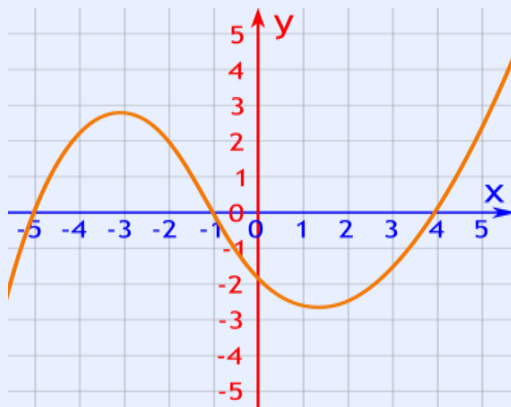
Explain the following operations regarding the set P and W:

- (i) $P \cap W$ (ii) $P \cup W$ (iii) $P - W$ (iv) $P/$ or $W/$ (v) $W \subset U$

Q2. Make a Venn diagrams of given operation in Q1. with using colored pens:



- (i) $P \cup W/$ (ii) $(P \cup W) - (P \cap W)$ (iii) $P/ \cap W/$ (vi) $P \cap W/$



SECRET TUNNEL

(Above Graph is cubic function $(x+5)(x+1)(x-4)$ which show a secret tunnel)

Q3. If India's defense chiefs so desire, certain secret tunnels which are based on graph of following functions could be constructed to connect frontline warriors across various locations; these tunnels would provide protection during heavy mortar fire or high-intensity shelling by the enemy: -

(Use the graph paper and paste it on HHW Note Book)

Draw the graph of following functions and show the domain and range limit.

(NOTE: Interval of x is called domain(f) and Interval of y is called range(f) on graph)

f(x)	Domain	Range	Graph
$Y = x^3$			
$y = x - 3 $			
$y = x^2 - x$			
$Y = 2^x$			
$Y = (x+5)(x+1)(x-4)$			

Q4. Find secret code by communication between Raw Agents with solution of equations.

(Solve the equation and found secret code):

(i) $[x]^2 - 5[x] + 6 = 0$

(ii) $[x]^2 - 3[x] + 2 = 0$

(iii) $|2x - 3| - 1 = 0$

(iv) $2 \leq |x| \leq 3$

(v) $|x - 4| + |x - 3| = 3$

(vi) $|x - 1| < 3$

(vii) $\sqrt{3}x^2 - \sqrt{2}x + 3\sqrt{3} = 0.$

(viii) $x^2 - 2x - |x - 1| - 5 = 0$

(ix) $2x^2 + x + 1 = 0$

(x) $-x^2 + x - 2 = 0$

Q5. Evaluate by using any short formula:

(i) $\sin 75^\circ$

(ii) $\cot 75^\circ$

(iii) $\sin 105^\circ$

(iv) $\cos 15^\circ - \cos 105^\circ$

(v) $\cos^2 75^\circ - \sin^2 15^\circ$

(vi) $\frac{\tan 30^\circ + \tan 15^\circ}{1 - \tan 30^\circ \tan 15^\circ}$

(vii) $\sin 22\frac{1}{2}^\circ$

(viii) $\cos 22\frac{1}{2}^\circ$

विषय – संस्कृत

1. सोमनाथ-मन्दिरस्य इतिहासः तथा च तस्य धार्मिक-महत्त्वस्य सचित्र वर्णनं कुरुत ।
2. स्व-पाकशालायाम् उपलब्ध-खाद्य-वस्तूनां नामानि तेषां पात्रेषु संस्कृते विलिख्य छायाचित्राणि A4 sheet कर्गदे संश्लेश्य आनयन्तु ।
3. सामूहिकं यज्ञं कृत्वा सामूहिकं योगप्रशिक्षणं च दत्वा तस्य सामूहिकछायाचित्रम् एकस्मिन् A4 sheet कर्गदे संश्लेश्य तस्य विवरणं संस्कृतेन लिखत ।
4. पाठितानां गीतायाः श्लोकानां स्मरणं पुनरावृत्तिः च कुर्वन्तु ।
गीतायाः लिंक- <https://youtu.be/Bn7RDxdrSiA?si=lua0YVW3dJJU9a-M>
5. किम् शब्दस्य त्रिषु लिंगेषु, अस्मद्, युष्मद् शब्दानां रूपाणि स्मृत्वा संचिकायां लिखन्तु ।
6. स्वर-सन्धेः भेदानां परिभाषाम् उदाहरणसहितं विलिख्य आनयत ।
7. क्रिया कलाप-

क्रम. सं.	दिनाङ्कः	अभिवादनम्	योगः	यज्ञः	भोजनमन्त्रः	संस्कृतवाक्यम्	शयनमन्त्रः	अभिभावक-हस्ताक्षरम्
1.	27.05.26							
2.	28.05.26							
3.	29.05.26							
4.	30.05.26							
5.	31.05.26							
6.	1.06.26							
7.	2.06.26							

क्रम. सं.	दिनाङ्कः	अभिवादनम्	योगः	यज्ञः	भोजनमन्त्रः	संस्कृतवाक्यम्	शयनमन्त्रः	अभिभावक-हस्ताक्षरम्
8.	3.06.26							
9.	4.06.26							
10.	5.06.26							
11.	6.06.26							
12.	7.06.26							
13.	8.06.26							
14.	9.06.26							
15.	10.06.26							
16.	11.06.26							
17.	12.06.26							
18.	13.06.26							
19.	14.06.26							
20.	15.06.26							
21.	16.06.26							
22.	17.06.26							
23.	18.06.26							
24.	19.06.26							
25.	20.06.26							
26.	21.06.26							
27.	22.06.26							

क्रम. सं.	दिनाङ्कः	अभिवादनम्	योगः	यज्ञः	भोजनमन्त्रः	संस्कृतवाक्यम्	शयनमन्त्रः	अभिभावक-हस्ताक्षरम्
28.	23.06.26							
29.	24.06.26							
30.	25.06.26							

धातव्य -

1. भो छात्र ! प्रतिदिन आपको उपरोक्त क्रिया कलाप अवश्य करने हैं और प्रतिनित्य अपने अभिभावकों के हस्ताक्षर इस आशय से कराने हैं कि आपने उनके समक्ष किया है।
2. प्रतिदिन किये गये क्रिया कलाप को चित्र के माध्यम से प्रमाण सहित उपस्थित करना अनिवार्य है।
3. संस्कृत वाक्य में प्रतिदिन अपने अभिभावकों को एक-एक संस्कृत का वाक्य सिखाना है।
4. इस गृहकार्य के अंक आपके आंतरिक मूल्यांकन (Internal Assessment) के क्रियाकलाप (Activity) में जोड़े जायेंगे।

विषय: हिंदी

भाग – 'क' : रचनात्मक अभिव्यक्ति

निम्नलिखित में से कोई एक कार्य कीजिए —

1. “यदि संसार में युद्ध न होते...” विषय पर लगभग 500 शब्दों में भावात्मक निबंध लिखिए।
2. सीमा पर तैनात एक सैनिक की डायरी का एक पृष्ठ लिखिए।
3. “शांति ही मानवता का भविष्य है” विषय पर कविता लिखिए।
4. युद्ध से प्रभावित एक बच्चे की ओर से विश्व के नेताओं को पत्र लिखिए।

भाग – 'ख' : शोध आधारित गतिविधि (research based activity)

निम्नलिखित में से किसी एक विषय पर परियोजना फाइल (प्रोजेक्ट फाइल) तैयार कीजिए

1. महाभारत युद्ध तथा उसके परिणाम
2. प्रथम अथवा द्वितीय विश्व युद्ध का मानवता पर प्रभाव
3. गांधी जी तथा अहिंसा का सिद्धांत
4. विश्व शांति स्थापना में संयुक्त राष्ट्र संघ की भूमिका
5. आधुनिक तकनीक (टेक्नोलॉजी) और युद्ध

विशेष बिंदु--

(चित्र, समाचार-पत्रों की कटिंग, प्रेरक कथन (कोटेशन) तथा अपने विचार अवश्य सम्मिलित करें।)

भाग – *'ग' : दक्षता आधारित प्रश्नावली

निम्नलिखित प्रश्नों के उत्तर दीजिए* —

1. युद्ध और प्रतियोगिता में क्या अंतर है?
2. क्या केवल शक्तिशाली राष्ट्र ही शांति स्थापित कर सकते हैं? अपने विचार लिखिए।
3. महाभारत से आधुनिक समाज क्या सीख सकता है?
4. युद्ध का सबसे अधिक प्रभाव किन लोगों पर पड़ता है और क्यों?
5. यदि आप संयुक्त राष्ट्र संघ के प्रमुख होते, तो विश्व शांति हेतु क्या कदम उठाते?
6. सामाजिक माध्यम (सोशल मीडिया) युद्ध और शांति दोनों को किस प्रकार प्रभावित करता है?
7. क्या विज्ञान मानवता के लिए वरदान है अथवा युद्ध का साधन? तर्क सहित लिखिए।

8. “अहिंसा सबसे बड़ी शक्ति है।” स्पष्ट कीजिए।
9. युद्ध के कारण पर्यावरण पर क्या प्रभाव पड़ता है?
10. शांति स्थापित करने में युवाओं की क्या भूमिका हो सकती है?

विद्यार्थियों हेतु निर्देश

1. कार्य ए-4 आकार (साइज़) की फाइल अथवा कॉपी में सुंदर लेखन में कीजिए।
2. परियोजना फाइल 8 से 10 पृष्ठों की होनी चाहिए।
3. चित्र, चार्ट, समाचार, प्रेरक कथन (कोटेशन) तथा अपने विचार अवश्य सम्मिलित करें।
4. सभी प्रश्नों के उत्तर अपने शब्दों में लिखिए।
5. कार्य स्वच्छ, रचनात्मक तथा व्यवस्थित होना चाहिए।
6. विद्यार्थियों को कक्षा में कराया गया समस्त कार्य नियमित रूप से दोहराना (revise) तथा अभ्यास करना भी अनिवार्य है।