

SUMMER HOLIDAYS HOMEWORK**ENGLISH**

1. International Tobacco Control Programme is an Organization that is working worldwide to spread awareness about the hazards of tobacco use. Create a poster for the organization highlighting the harmful effects of smoking and tobacco consumption in other forms. Include a helpline number for quitting tobacco and a website address for more information on quitting smoking/ tobacco.
2. SAHASTRADHARA – A Water conservation organization needs a poster to promote water conservation.
You may draft the poster highlighting the following points:
 - a. Water crisis facing the country
 - b. Need of water conservation
 - c. Simple tips to save water
3. Collect five display advertisements of different school's summer camps and prepare one display advt. for your school's summer camp. Invent all necessary details.

CHEMISTRY

Prepare a project on the topic “Organic Chemistry” with the help of the following guidelines:

1. Meaning and definition of Organic Chemistry.
2. List of functional groups.
3. Electronic effects of compounds attached to organic compounds.
4. Methods of purification of organic compounds.

PHYSICS

1. Prepare a project on any one of the following topics:
 - (a) Elasticity
 - (b) Surface tension
 - (c) Viscosity
 - (d) Thermodynamics
 - (e) Wave motion
 - (f) Collision
 - (g) Satellite
 - (h) Projectile
 - (i) Mechanical energy
 - (j) Rotatory motion

MATHEMATICS

1. If $A \cup B = A \cap B$, prove that $A = B$.
2. Let $A = \{ a, b \}$, $B = \{ a, b, c \}$. Then,
 - (i) What is the relation between sets A and B
 - (ii) What is $A \cup B$
 - (iii) What is $A \cap B$
3. In a group of 65 people, 40 like cricket, 10 like cricket and tennis. How many like tennis only and not cricket? How many like tennis?
4. If X and Y are two sets such that $X \cup Y$ has 28 elements, X has 18 elements and Y has 25 elements; how many elements does $X \cap Y$ have?
5. In a survey of 100 students in a school, 10 were listed as taking apple juice, 50 as taking orange juice and 5 were listed as taking both apple as well as orange juice. Find how many students were taking neither apple juice nor orange juice.
6. If $A = \{ 1, 2 \}$, then find $\{ A \times A \times A \}$
7. Prove that :
$$\frac{\sin 8x \cdot \cos x - \sin 6x \cdot \cos 3x}{\cos 2x \cdot \cos x - \sin 4x \cdot \sin 3x} = \tan 2x$$
8. Find the domain and range of the real function $f(x) = \frac{1}{x-3}$

9. Let $f = (1,1) (2,3), \dots$ be a function from Z to Z , $\{ \}$ defined by $f(x) = ax + b$, for some integers a and b . Determine a and b .
10. Find the domain and range of $f(x) = \sqrt{9 - x^2}$
11. Find the domain and range of $f(x) = 3 / 5 - x^2$
12. Find the domain and range of the real function $f(x) = - |x|$
13. Find the values of $\sin 18^\circ$ and $\cos 36^\circ$.
14. Prove that $\sin 10^\circ \sin 30^\circ \sin 50^\circ \sin 70^\circ = (1/16)$
15. Prove that : $\tan 70^\circ = \tan 20^\circ + 2 \tan 50^\circ$.
16. Calculate the value of $\sin 15^\circ$, $\cos 75^\circ$, $\tan 75^\circ$.
17. Prove that: $\cos 20^\circ \cos 40^\circ \cos 60^\circ \cos 80^\circ = 1/16$.
18. Using PMI, prove that $n^2 + n$ is even for all $n \in$ natural numbers.
19. Show that $\sin 105^\circ + \cos 105^\circ = (1/\sqrt{2})$
20. Solve: $\sec x - \tan x = \sqrt{3}$

PHYSICAL EDUCATION

- Q1.** Define physical fitness and wellness. Elaborate the importance of physical fitness and wellness in detail.
- Q2.** Narrate the various sports at national and international level.
- Q3.** Define physical education and explain its aim and objectives in detail.
- Q4.** Name the careers available in the field of physical education in India.
Discuss the performance related careers in detail.
- Q5.** Elucidate about the development of values through the Olympic Movement.
- Q6.** Explain about khelo-India program.

COMPUTER

Answer the following questions:

- Q1. What are tokens in python? How many types of tokens are allowed in python?
Name them
- Q2. How are keywords different from identifiers?
- Q3. Name the various types of literals in python? Give examples of each.
- Q4. What are operators? What is their functions ?
- Q5. What is the difference between a statement and an expression?
- Q6. What are variables? How are they important for a program?
- Q7. What is dynamic typing?
- Q8. What is the difference between interactive mode and script mode in python?
- Q9. Enumerate the rules for naming an identifier?
- Q10. What is a comment line? How do you write a comment that extends beyond a single line?

PRACTICE THE FOLLOWING PYTHON PROGRAMS

1. Write a simple python program to get the input from the user interactively using the built-in function input ().
2. Write a simple python program to get the input from the user and use int () or float () function with the read value to change the type.
3. Write a python program to print the area of a circle of radius 3.75meters.
4. Write a simple python program to obtain length and breadth of a rectangle and calculate the area.
5. To obtain temperatures of 07 days and then display average temperature of the week.
6. WAP to find no is even and odd
7. WAP to find elder person in 2 persons
8. WAP to find given year is leap year or not
9. Write a program to compute simple interest.
10. WAP to find which no is greater no in 2 numbers
11. Find the output of the given code
Name = "Komal"
Age = 18
Print ("your name & age are", name +Age)
12. WAP to input marks in 3 subjects, compute average and then calculate grades as per following guidelines: