

English (301)

1. ANY ONE ACTIVITY FROM THE FOLLOWING HAS TO BE DONE BY STUDENTS.
 - A. Imagine that you have to organise a festival in your school to celebrate 153rd Birth anniversary of Gandhiji. The objectives are to-
 - ❖ create an awareness about Gandhiji
 - ❖ follow Gandhian principles
 - ❖ lay special emphasis on vasudhaiva kutumbakamYou plan to have at least 6 events, with rules, duration and other necessary details. Give interesting names to the events. **Design a brochure for this festival** (can do it on paper or digitally).
 - B. **Design a video game**, with rules for participation, with the theme- Landmark events in Gandhiji's life. Write the rules for the game.
 - C. You decide to have a food court with cuisine of places where Gandhiji had visited in a school carnival. Name any 5 places you would choose, with one recipe from each place. **Design an advertisement for your food court.**
 - D. **Design a school uniform with khadi**, using Sohrai paintings, like Sabyasachi has used bandhni for a school uniform in Jaipur.
 - E. After reading Gandhi's autobiography, **write a poem on 'My Experiment With Truth'**.
 - F. **Design a poster for a panel discussion** on 'Relevance of Gandhian Principles Today'.
 - G. Make a **drawing/sketch/painting** on the theme- 'The earth has enough for everyone's need but not for everyone's greed'.
2. **Write a speech** within 150 words on 'Phones are distracting students from learning'.
3. **Answer the following questions in 100 words.**
 - A. Markus Natten, though showing disapproval regarding the behaviour of adults, also raises a very important point, that of independent thinking and individuality. Do you agree that independent thinking and individuality make us what we are? Elaborate in the context of the poem 'Childhood'.
 - B. How did Rajendra Deshpande apply his theory of catastrophic experience regarding the Battle of Panipat?

Physics (042)

Prepare a PPT (Power Point Presentation) on 'Kinetic Theory of Gases' and 'Thermal Properties of Matter'. Group Leader of each group comprising of 5 students should distribute the topics to the group members and do the compilation at the end.

Topics to be included:

1. Kinetic Theory of Gases:

Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.

2. Thermal Properties of matter:

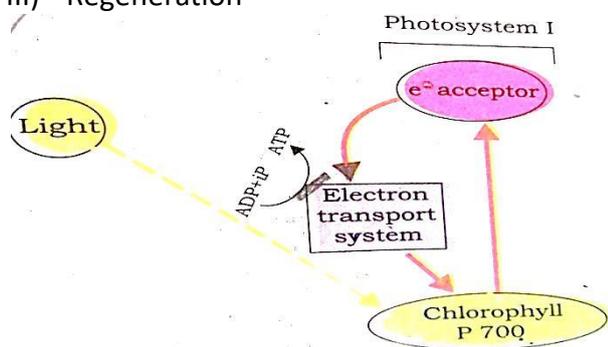
Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; C_p , C_v - calorimetry; change of state - latent heat capacity. Heat transfer-conduction, convection and radiation, thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law.

Chemistry (043)

1. Balance the following redox reaction by oxidation number method;
 - (i) $\text{MnO}_4^- (\text{aq}) + \text{I}^- (\text{aq}) \rightarrow \text{MnO}_2 (\text{s}) + \text{I}_2 (\text{s})$ (in basic medium)
 - (ii) $\text{Cr}_2\text{O}_7^{2-} (\text{aq}) + \text{Fe}^{2+} (\text{aq}) \rightarrow \text{Cr}^{3+} + \text{Fe}^{3+}$ (in acidic medium)
2. What is the oxidation state of Cr and S in (i) CrO_5 and H_2SO_5 and why.
3. Find the oxidising and reducing agent in the following reaction
 $\text{H}_2\text{S} + \text{I}_2 \rightarrow 2\text{HI} + \text{S}$
4. Define disproportionation reaction with example.
5. Balance the equations by ion-electron method.
 - (i) $\text{Fe}^{2+} (\text{aq}) + \text{Cr}_2\text{O}_7^{2-} (\text{aq}) \rightarrow \text{Fe}^{3+} (\text{aq}) + \text{Cr}^{3+} (\text{aq})$ (Acidic medium)
 - (ii) $\text{H}_2\text{O}_2 + \text{Fe}^{2+} (\text{aq}) \rightarrow \text{Fe}^{3+} (\text{aq}) + \text{H}_2\text{O}$ (Acidic medium)

Biology (044)

1. Explain Hatch and Slack Pathway with well labelled diagram.
2. Draw the well labelled diagram of the Calvin Cycle and describe it under the following three stages:
 - I) Carboxylation
 - II) Reduction
 - III) Regeneration



- A) Explain the above diagram.
- B) Name the reaction centre of PSI and PSII.

Standard Maths (041)

1. Find the equations of the lines, which cut-off intercepts on the axes whose sum and product are 1 and -6, respectively.
2. A line is such that its segment between the lines $5x - y + 4 = 0$ and $3x + 4y - 4 = 0$ is bisected at the point (1, 5). Obtain its equation.
3. Find the distance between the parallel lines $3x - 4y + 7 = 0$ and $3x - 4y + 5 = 0$
4. If p and q are the lengths of perpendiculars from the origin to the lines $x \cos \theta - y \sin \theta = k \cos 2\theta$ and $x \sec \theta + y \csc \theta = k$, respectively, prove that $p^2 + 4q^2 = k^2$
5. Find the direction in which a straight line must be drawn through the point (-1, 2) so that its point of intersection with the line $x + y = 4$ may be at a distance of 3 units from this point.
6. Find the image of the point (3, 8) with respect to the line $x + 3y = 7$ assuming the line to be a plane mirror.
7. A person standing at the junction (crossing) of two straight paths represented by the equations $2x - 3y + 4 = 0$ and $3x + 4y - 5 = 0$ wants to reach the path whose equation is $6x - 7y + 8 = 0$ in the least time. Find equation of the path that he should follow.
8. In what ratio, the line joining (-1, 1) and (5, 7) is divided by the line $x + y = 4$?

Applied Maths (241)

1. First term of a sequence is 1 and the (n+1)th term is obtained by adding (n+1) to the nth term for all natural numbers n. Find the sixth term of the sequence.
2. If a, b, c are pth, qth and rth terms respectively of an AP, prove that $p(b-c) + q(c-a) + r(a-b) = 0$
3. The income of a person is Rs300000 in the first year and he receives an increase of Rs 10000 to his income per year for the next 19 years. Find the total amount he received in 20 years.
4. Insert five numbers between 8 and 26 such that the resulting sequence is an AP.
5. Determine the 12th term of a G.P. whose 8th term is 192 and common ratio is 2.

Computer Science (083)

For Practical Copy

Write python programs:

1. To generate and print the first 'n' natural numbers.
2. To generate and print the series:
 - (a) n, n-1, n-2,.....,3,2,1
 - (b) To print the series: 1, 2, 4, 7, 11, 16, n terms
 - (c) To print the series: 1, 1, 2, 3, 5, 8, 13, N term
 - (d) To print the series: 1, 4, 9, 16, N terms
3. To calculate and print the value of 'S':
 - (a) $S=1+2+3+4+\dots+n$
 - (b) $S=1+3+5+7+\dots$ upto n terms
 - (c) $S= (1+x) + (1+2x) + (1+3x) + \dots + (1+nx)$
4. To enter a number and check for prime.
5. To calculate and print the factorial of an entered number
6. To enter a number and check whether it is an Armstrong Number. (Armstrong number is *a number that is equal to the sum of cubes of its digits*)
7. To print all prime numbers from 1 to n.
8. To print all Armstrong numbers from 1 to 1,00,000.

Informatics practices (065)

1. Give the output:
 - a. `>>> print("Rajan said, "It' a lovely day"")`
 - b. `>>> print("Ram said, \"I AM LEARNING PYTHON")`
 - c. `>>> print("Ram said, "I AM LEARNING PYTHON"")`
 - d. `>>> print ('Sangeeta said, "I've got good grades" ')`
 - e. `>>> print ('Sangeeta said, "I've got good grades" ')`
 - f. `>>> print("A goal \n without a plan is just a \t wish")`
2. Give the elements of the following string which are present at the given index numbers:
`str="Hard work pays off"`
 - a. `str [2]`
 - b. `str [-3]`
 - c. `str [2:5]`
 - d. `str [2:5:2]`
 - e. `str [:5]`
 - f. `str [3:]`
 - g. `str [::2]`
 - h. `str [::-2]`
 - i. `str [-5:-2]`
 - j. `str [5:2:-1]`
 - k. `str [-2:-5:-1]`
 - l. `str [-2:-5:-2]`

Physical Education (048)

Prepare a PPT (Power Point Presentation) on the topic ...

1. Importance of Test, measurement and evaluation.
2. Calculation of BMI at least 5 members of your family.
3. Explain the function and structure of circulatory system and heart.

Painting (049)

1. Draw any still life composition with your own imagination and shade with pencil.
2. Describe (write) descent of Ganga in 100 words

NOTE- Make your assignment in a decorated file.

HVM (034)

1. Write the notation of Drut Khayal in Rag Bhimpalasi.
2. Write the taal notation of Ektaal taal with dugun, teegun, chaugun laykari.

