PHYSICS

1. State Pascal's law for fluids with the help of a neat labelled diagram explain the principle and working of hydraulic brakes.

2. State and prove Bernoullis theorem. Give its limitation. Name any two application of the principle. 100. Define terminal velocity.

3. Show that there is always an excess pressure on the concave side of the meniscus of a liquid. Obtain an expression for the excess pressure inside (i) a liquid drop (ii) soap bubble (iii) air bubble inside a liquid.

4. A force of 5×10^3 N is applied tangentially to the upper face of a cubical block of steel of side 30 cm. Find the displacement of the upper face relative to the lower one, and the angle of shear. The shear modulus of steel is 8.3×10^{10} pa.

5. An aluminium wire 1 m in length and radius 1 mm is loaded with a mass of 40 kg hanging vertically. Young's modulus of Al is 7.0×1010 N/m2. Calculate (a) tensile stress (b) change in length (c) tensile strain and (d) the force constant of such a wire.

Biology

1. Give a brief account on the counter current mechanism .
2. Describe the important steps in muscle contraction.
3. Digrammatically indicate the location of the various endocrine glands in our body .
4. Give the schematic representation of an overall view of kreb's cycle .
5. Give comparison between C3and C4 pathways .
Note :
☐ Prepare investigatory project on different topic .
☐ Revise the syllabus covered and prepare well for test .

Chemistry

1. Mention the general characteristics of equilibria involving physical processes.

2. Write the expression for the equilibrium constant for the reaction :

$4NH_3 (g) + 5O_2 (g) \rightleftharpoons 4NO (g) + 6H_2 O (g)$

3. When the total number of moles of product and reactants are equal, K has no unit. Give reason.

4. What is the unit of equilibrium for the reaction $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3 (g)$.

5. The value of Kc for the reaction $2A \rightleftharpoons B+C$ is $2x10^{-3}$. At a given time, the composition of the reaction mixture is [A] = [B] =[C] = $3x10^{-4}$ M. In which direction the reaction will proceed?

English

1. You are a general manager of PNT company, Noida, which requires to purchase posh bungalows as guest houses. Draft anadvertisement in 50 words to be published in the classified columns of 'The Tribune'.

2. Shanti Travels at 208 , Western road Meerut, offers a pilgrimage Tour 'Char DhamYatra'by bus from Delhi for 10 days. Draft a suitable advertisement in 50 words on behalf of Shanti travels to be published in the classified columns of a newspaper.

3. Incidents of road-rage are increasing day by day. Draft a poster in 50 words on behalf of Delhi Traffic Police providing Road Safety Tips.

4. 'The government has banned the use of animals in the liberal trees for the purpose of dissection'. Write a debate in 120-150 words either for or against the decision.

5. Learn and revise PT-2 syllabus.

Physical Education

Q1. Explain the importance of Biomechanical in Physical Education and sports.
Q2. Describe the type of bones found in functiona.
Q3. Elaborate test measurement and evaluation.
Q4. Write in detail about waist hip ratio skinfold measures.
Q5.Prepare a project on health related fitness of the students of your school.
Q6. Complete practical file. (Syllabus 2023-24)

MATHS

1. Find the sum to n terms of the sequence 6 ,66, 666, 6666…..
2. Find the equation of the line passing through (-3, 5) and perpendicular to the line through the points (2,5) and (-3 , 6).
3. If a,b,c,d are in G.P , then show that a^2-b^2 , $b^2 – c^2$, c^2-d^2 are also in G.P.
4. Find the equation of the line passing through the point of intersection of $2x + y = 5$ and $x+3y+ 8 = 0$ and parallel to the line $3x + 4y = 7$.
5. Find the values of k for which the line $(k-3) x – (4- k^2)y + k^2 – 7k + 6 = 0$ is parallel to the x axis.