NEW STANDARD ACADEMY

DPP -03 **NEET - JEE**

CLASS : 11TH

PHYSICS

1. What is the angle made by vector, $A = 2\hat{i} + 2\hat{j}$ with x-axis?
2. What is the value of m in $\hat{i} + m\hat{j} + \hat{k}$ to be unit vector?
3. Two equal force having their resultant equal to either. At what angel are they inclined?
4. What will be the net effect on maximum height of a projectile when its angle of projection is changed from 30^0 to 60^0, keeping the same initial velocity of projection?
5. If $\vec{A} \times \vec{B} = \vec{C} \times \vec{B}$, show that $\vec{C}$ need not be equal to $\vec{A}$. when will $\vec{A}$ be equal to $\vec{C}$?
6. Find a unit vector parallel to the resultant of the vectors: $\vec{A} = 2\hat{i} + 4\hat{j} - 5\hat{k}$ *and* $\vec{B} = \hat{i} + 2\hat{j} + 3\hat{k}$
7. Determine the value of m so that $\vec{A} = 2\hat{i} + m\hat{j} + \hat{k}$ *and* $\vec{B} = 4\hat{i} - 2\hat{j} - 2\hat{k}$ are perpendicular.
8. When will the ratio between $|\vec{A} \times \vec{B}|$ *and* $|\vec{A}.\vec{B}|$ *be* $\sqrt{3}$?
9. What is the angle between $(\vec{A} + \vec{B})$ *and* $(\vec{A} \times \vec{B})$?
10. Two forces acing on a particle in opposite directions have a resultant of 10 N. If they act at right angles to each other, the resultant is 50 N. Find the two forces.

CHEMISTRY

1. What is the basic theme of organization in the periodic table ?
2. Which properties of the elements depend on the electronic configuration of the atoms and which do not ?
3. What is the IUPAC name, official name and symbol of the element with atomic number 110 ?
4. What is the most important cause of periodicity ?
5. Out of Na and Mg, which has higher second ionisation energy ?
6. Arrange the following elements in order of decreasing electron gain enthalpy : B, C, N, O.
7. Arrange the following elements in the increasing order of non-metallic character.
   B, C, Si, N, F
8. Give the general electronic configurations of
   (i) p-block element (ii) actinoids
9. The electronic configuration of an element is $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$. Locate the element in the periodic table.
10. An element belongs to third period of p-block. It has four valence electrons. Predict its group. How many unpaired electrons does it have?

BIOLOGY

1. Name the compounds that bind ribosome to RER.
2. Make a list of the organelles that function as cytoskelton.
2. Name the cell organelles without a limiting membrane.
3. What is a protoplast?
4. What shows the fluidity of cell membrane.
5. What are gas vacuoles, state their functions.
6. How do smooth E R and rough E R differ.
7. How much energy is released by hydrolysis of ATP.
8. What is the difference in the chemical structure of starch and cellulose?
9. What is the glycositic bond explain with example.

MATHS

1. Find the angle in radians between the hands of aclock at 7: 20 p.m .
2. If $A + B = \frac{\pi}{4}$, then prove that
   $(1 + \tan A)(1 + \tan B) = 2$
3. If $\cot \alpha = \frac{1}{2}$, $\sec \beta = \frac{-5}{3}$, where
   $\pi < \alpha < \frac{3\pi}{2}$ and $\frac{\pi}{2} < \beta < \pi$. Find value of
   $\tan(\alpha + \beta)$
4. Draw $\sin x$, $\sin 2x$ and $\sin 3x$ on same graph and with same scale.
5. If $f(x) = \frac{\cot x}{1 + \cot x}$ and $\alpha + \beta = \frac{5\pi}{4}$, then find
   $f(\alpha).f(\beta)$.
6. Find the value of $\sqrt{3}\ \text{cosec}\, 20^\circ - \sec 20^\circ$
7. If $\tan A - \tan B = x$, $\cot B - \cot A = y$, prove

that $\cot(A-B)=\frac{1}{\chi}+\frac{1}{y}$

8. If α and β are the solution of the equation, $a\tan\theta+b\sec\theta=c$, then show that

$$\tan(\alpha+\beta)=\frac{2ac}{a^2-c^2}$$

9. If $\cos x=\cos\alpha\cos\beta$, then prove that

$$\tan\left(\frac{x+\alpha}{2}\right)\cdot\tan\left(\frac{x-\alpha}{2}\right)=\frac{\tan^2\beta}{2}$$

10. If $\tan(\pi\cos\theta)=\cot(\pi\sin\theta)$, the prove that $\cos\left(\theta-\frac{\pi}{4}\right)=\pm\frac{1}{2\sqrt{2}}$