NEW STANDARD ACADEMY

Exam : MOCK- 10 | **NEET - JEE** | **Marks: 60**
Date : 22-05-23 | **CLASS : 9TH** | **Time: 3 HRS**

PHYSICS

1. What is balanced force?.
2. What is inertia?.
3. What is the direction of momentum?.
4. When a force of 40 N is applied on a body it moves with an acceleration of 5 ms. Calculate the mass of the body.
5. It is required to increase the velocity of a scooter of mass 80 kg from 5 to 25 ms^{-2} in 2 seconds. Calculate the force required.
6. Calculate the force required to impact to a car, a velocity of 30 ms^{-1} in 10 seconds. The mass of the car is 1,500 kg.
7. How long should a force of 100 N act on a body of 20 kg so that it acquires a velocity of 100 ms^{-1}?.

CHEMISTRY

1. Why is Kelvin scale of temperature regarded as better scale than Celsius?
2. Name two processes from which it may be concluded that the particles of a gas move continuously.
3. Why do people perspire a lot on a hot humid day? can do it as he has expertise in this.
4. Cotton is solid but it floats on water. Why?
5. Explain the inter-conversion of three states in terms of force of attraction and kinetic energy of the molecules.
6. Pressure and temperature determine the state of a substance. Explain this in detail.

BIOLOGY

1. What is cell division.?Give the type of cell division.
2. Name the organelles which show the analogy written as under

a) Transporting channels of the cell.....
b) Power house of the cell.....
C) Kitchen of the cell.....
d) Packaging and dispatching unit of the cell.....
e) Storage sacs of the cell.....
f) Digestive bag of the cell.....

3. Differentiate between mitosis and meiosis
4. Draw a neat diagram of animal cell and label only four parts.
5. Which type of enzymes are present in the lysosomes?What is their function? Which cell organelles manufacture these enzymes?
6. Match the following:

Column I	Column II
a)Mitochondria.	Entry and exit
b)Golgi complex.	Protein
c)Lysosomes.	Secretion
d)Centrosome.	ATP
e)Cell membrane.	Digestive bags
f)Ribosome	Cell division

7. Write difference between prokaryotic and eukaryotic cells.

MATHS

1. Use factor theorem to verify in each of the following that q(x) is a factor of p(x).
   $p(x) = 3x^6 - 7x^5 + 7x^4 - 3x^3 + 2x^2 - 2$, $q(x) = x - 1$
2. Factorize each of the following expression
   $(x - 4)$
3. If $(x - 1)$ is a factor of $p(y) = y^3 - 7y + 6$ then find other two factors.
4. Using factor theorem, factorize the polynomial $x^4 + x^3 - 7x^2 - x + 6$.
5. Let A and B are the remainders when the polynomial $y^3 + 2y^2 - 5ay - 7$ and $y^3 + ay^2 - 12y + 6$ are divided by $y + 1$ and $y - 2$ respectively. If $2A + B = 6$, find the value of a.
6. If polynomial $x^3 + \ell x + m$ is dividing $(x - 1)$ & $(x + 1)$ then remainder is 7. Find values of ℓ and m.
7. Find the factors
   $x^3 + 17x^2 + 95x + 175$.
8. Simplify : $\sqrt{2a^2 + 2\sqrt{6}ab + 3b^2}$
9. Factorise $x^6 + y^6$.
10. What must be subtracted from $4x^4 - 2x^3 - 6x^2 + x - 5$ so that the result is exactly divisible by $2x^2 + x - 1$