NEW STANDARD ACADEMY

DPP -02　　　　　　　　　　**NEET - JEE**
　　　　　　　　　　　　　　　CLASS : 12TH

PHYSICS

1. Two wires of equal length, one of copper and the other of manganin have the same resistance. Which wire is thicker?
2. The emf of a cell is always greater than its terminal voltage. Why?
3. A cell of emf E and internal resistance r draws a current I. Write the relation between terminal voltage V in terms of E, I and r.
4. A wire of resistance 8 R is bent in the form of a circle. What is the effective resistance between the ends of a diameter AB?
5. Specific resistances of copper, silver and constantan are 1.78×10^{-6} Ω cm, 10^{-6} Ω cm and 48×10^{-6} Ω cm, respectively. Which is the best conductor and why?
6. A heating element is marked 210 V, 630 W. What is the value of the current drawn by the element when connected to a 210 V DC source?
7. In a meter bridge, two unknown resistances R and S, when connected between the two gaps, gives a null point is 40 cm from one end. What is the ratio of R and S?
8. Name the device used to measure the internal resistance of a secondary cell.
9. A cell of emf 2 V and internal resistance 0.1 Ω is connected to a 3.9 Ω external resistance. What will be the potential difference across the terminals of the cell?
10. In an experiment of meter bridge the balancing length of the wire is l. What would be its value if the radius of the meter bridge wire is double? Justify your answer.

CHEMISTRY

1. Arrange the following metals in the order in which they distance each other from the solution of their salts.
   Al, Cu, Fe, Mg and Zn
2. What is the relationship between the standard EMF of a cell and the equilibrium constant of the cell reaction at 298 K?
3. Write the relationship between conductivity and molar conductivity?
4. What is the unit of molar conductivity?
5. Which equation establishes relationship about variation of molar conductivity with concentration?

6. What is the potential hydrogen electrode.
7. Explain the term limiting conductivity.
8. How is cell constant calculated from conductance values?
9. What is the polarity of the cathode of an electrolytic. Cell?
10. What is meant by Faraday constant ?

BIOLOGY

1 What is a test cross how can it determine the heterozygoecity of a plant?
2 How do human males with xxy abnormalities suffer?
3 Write the type of sex determination mechanism of bird?
4 What is pliotropy? Give example.
5 Give the difference between autosome and allosomes?
6 What is a point mutation . Give one example.
7 What is a RNA word? Explain it.
8 What is nucleosome?
9 What are dual function of deoxy ribo nucleoside tri phosphate?
10-what is Bioinformatics?

MATHS

1. Write the smallest reflexive relation on set $A = \{1,2,3,4\}$
2. If $R = \{(x, y) : x + 2y = 8\}$ is a relation on N by, then write the range of R.
3. If R is a symmetric relation on a set A, then write a relation between R and R^{-1}.
4. Let $R = \{(x, y) : |x^2 - y^2| < 1\}$ be a relation o na set $A = \{1,2,3,4,5\}$ write R a set of ordered pairs.
5. If $A = \{3,5,7\}$ and $B = \{2,4,9\}$ and R is a relation given by ''is less than'', write R as a set ordered pairs.
6. Show that the relation R defined by R = $\{(a, b) : a - b$ is divisible by 3 ; $a, b \in Z\}$ is an equivalence relation.
7. If $A = \{1,3,5,7\}$ define the relations on A which have properties of being
   (i) reflexive, transitive but not symmetric,
   (ii) symmetric but neither reflexive nor transitive,
   (iii) reflexive, symmetric and transitive.
8. Let A be the set of all lines in a plane, and R be a relation defined on A by $(l_1, l_2) \in R \Leftrightarrow l_1$ is parallel

to l_2 for all lines $l_1, l_2 \in A$, is an equivalence relation.

9. Show that the relation R, defined in the set A of all triangles as $R = \{(T_1, T_2) : T_1$ is equivalence relations. Consider there right triangles T_1 with sides 3, 4, 5 ; T_2 with sides 5, 12, 13 and T_3 with sides 6, 8, 10. Which triangle among T_1, T_2 and T_3 are related?

10. Check whether the relation R on R defined by R = $\{(a,b) : a \leq b^3\}$ is reflexive, symmetric or transitive.