NEW STANDARD ACADEMY

Exam :	NEET - JEE	Marks: 60
Date : 07-08-2023	CLASS : 10TH (M)	Time: 3 HRS

PHYSICS

1. List any two factors on which resistance of a conductor depends.
2. When is potential difference between two points said to be 1 volt?
3. Why do we use copper and aluminium wire for transmission of electric current?
4. What happens to the resistance of a conductor when the length of the conductor is reduced to half?
5. Define resistivity of a material.
6. A cylinder of a material is 10 cm long and has a cross-section of $2\,cm^2$. If its resistance along the length be 20 ohm, what will be its resistivity in number and units?
7. Calculate the number of electrons that would flow per second through the crosssection of a wire when 1 A current flows in it.

CHEMISTRY

1. In the refining of silver, the recovery of silver from AgNo3 solution displacement Cu metal. Write down the reaction involved.
2. Give two examples to indicates the role of de composition reaction in metal industries.
3. Give three practicad applications of neutralization reaction.
4. Explain giving reasons:
   - Tastaric acid is a component of baking powder used in making cakes.
   - Gypsum ius used in manufacture of cement.
5. Name two element that are alloyed with iron to make stainless steel.
6. Write equation for the reaction of
   - Iron with steam
   - Ca and K with water

BIOLOGY

1. Name one gland each.
   (A) which acts only as an endocrine gland.
   (B) which acts only as an exocrine gland.
   (C) which acts both as an endocrine gland as well as an exocrine gland.
2. **(A)** Name the hormones secreted by the following endocrine glands: (i) Thyroid gland

(ii) Parathyroid glands
(iii) Pancreas
(iv) Adrenal glands
(B) Write the functions of testosterone and oestrogen hormones.
3. What is the function of insulin hormone? What type of patients are given insulin injections?
4. Which hormone.
   (A) prepares the body for action?
   (B) controls the amount of glucose in blood?
   (C) gives boys a deep voice?
   (D) gives girls soft skin?
5. Why is it that asexual reproduction produces exact copies but sometimes minor variations are also seen in next progeny?
6. State the meaning of inherited traits and acquired traits. Which of the two is not passed on to the next generation? Explain with the help of an example.
7. What is the importance of DNA copying in reproduction? Why is variation beneficial to the species but not necessary for the individual? Explain.

MATHS

1. If $\sin \alpha = \frac{1}{2}$, then find the value of $3 \sin \alpha - 4\sin^3\alpha$.
2. If $(1 + \cos A)(1 - \cos A) = \frac{3}{4}$, find the value of $\sec A$.
3. If $\operatorname{cosec} \theta = \frac{5}{3}$, then what is the value of $\cos \theta + \tan \theta$.
4. If $6x = \sec \theta$ and $\frac{6}{x} = \tan \theta$, find the value $9\left(x^2 - \frac{1}{x^2}\right)$.
5. If $\tan 2A = \cot (A + 60^0)$, find the value of A where $2A$ is an acute angle.
6. If $\sin(A + B) = 1$ and $\sin (A - B) = \frac{1}{2}$, $0 \le A + B = 90^o$ and $A > B$, then find A and B.
7. Prove that: $\sqrt{\frac{1 - \cos A}{1 + \cos A}} = \operatorname{cosec} A - \cot A$.
8. If in a triangle ABC right angled at B, AB = 6

units and $BC = 8$ units, then find the value of $\sin A \cdot \cos C + \cos A \cdot \sin C$.

9. Prove that: $\sin \theta(1 + \tan \theta) + \cos q(1 + \cot \theta) = \sec \theta + \mathrm{cosec}\theta$.

10. If $\sec \theta - \tan\theta = x$, show that: $\sec \theta = \frac{1}{2}\left(x + \frac{1}{x}\right)$ and $\tan \theta = \frac{1}{2}\left(\frac{1}{x} - x\right)$.