NEW STANDARD ACADEMY

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CLASS 11 (Academy) 19-05-2025

PHYSICS

1. What does the slope of position-time graph indicate?
2. How can the distance travelled be calculated from the Velocity time graph in a uniform one dimensional motion?
3. Define the term speed and velocity. Show that the displacement-time graph is equal to velocity of uniform motion.
4. Show that the displacement of a particle in given interval of time is equal to area under velocity-time graph of uniform motion.
5. Draw velocity-time graph of an object having uniform motion in one dimension. Also show that area under this graph represent displacement of object.

CHEMISTY

1. What is the e/m value for cathode rays ? Does it depend upon the nature of the gas taken and experimental conditions?
2. *e/m* for canal rays depends on experimental conditions, comment.
3. Calculate the e/m for the canal rays obtained from helium gas.
4. What is anode ray write its properties?
5. What is cathod ray write its properties?

BIOLOGY

1. Glycine and alanine are different with respect to one substituent on the carbon. What are other common substituent groups?
2. Name two trioses. Mention their chemical nature.
3. What is the other name of fructose? Give its source.
4. Glucose is categorized as a monosaccharide. How would you classify sucrose and glycogen?
5. What is cholesterol?
6. What is commomly known as 'animal starch'? What it is stored in mammalian body?
7. Nucleic acids exhibit secondary structure justify with example.
8. Nucleic acid exhibit secondary structure . Describe through Watson – Crik model.
9. What is the difference between a nucleotide and nucleoside? Give two examples of each with their structure.
10. How does temperature and pH affect enzyme activity?

MATH

1. Find the domain and the range of the following functions:
   (i) $f(x) = |x - 3|$ (ii) $f(x) = 3 - |x - 2|$
2. If a real function fis defined by $f(x) = \frac{|x| - x}{2x}$ then find its domain and range.
3. Find the domain and the range of the function f defined by $f(x) = \frac{|x-4|}{x-4}$
4. If f and g are two real functions defined by $f(x) = 2x + 1$ and $g(x) = 4x - 7$, then for what real numbers x
   (i) $f(x) = g(x)$? (ii) $f(x) < g(x)$?
5. Find the domain for which the functions $f(x) = 3x^2 - 1$ and $g(x) = 3 + x$ are equal.
6. Find the domain and the range of the following functions:
   (i) $f(x) = \sqrt{x + 2}$ (ii) $f(x) = \sqrt{3 - 2x}$
7. Find the domain and the range of the following functions:
   (i) $f(x) = \frac{4-x}{x-4}$ (ii) $f(x) = \frac{x^2-9}{x-3}$
8. Find the domain and the range of the following functions:
   (i) $f(x) = \sqrt{16 - x^2}$ (ii) $f(x) = \sqrt{x^2 - 9}$
9. Find the domain and the range of the function f defined by $f(x) = \frac{x+2}{|x+2|}$.
10. Find the domain of the following functions
    (i) $\frac{1}{\sqrt{x+|x|}}$ (ii) $f(x) = \frac{1}{\sqrt{x-|x|}}$