

NEW STANDARD ACADEMY

Marks: 80

Date : 13-04-2026

CLASS : 9TH

Time: 3 hours

PHYSICS

1. A farmer moves along the boundary of a square field of side 10 m in 40 s. What will be the magnitude of displacement of the farmer at the end of 2 minutes 20 seconds from his initial position?
2. An object travels 16 m in 4 s and then another 16 m in 2 s. What is the average speed of the object?
3. An athlete completes one round of a circular track of diameter 200 m in 40 s. What will be the distance covered and the displacement at the end of 2 minutes 20 s?
4. Distinguish between speed and velocity.
5. What does the path of an object look like when it is in uniform motion?
6. A bus decreases its speed from 80 km h^{-1} to 60 km h^{-1} in 5 s. Find the acceleration of the bus.
7. Joseph jogs from one end A to the other end B of a straight 300 m road in 2 minutes 30 seconds and then turns around and jogs 100 m back to point C in another 1 minute. What are Joseph's average speeds and velocities in jogging (a) from A to B.
8. Abdul, while driving to school, computes the average speed for his trip to be 20 km h^{-1} . On his return trip along the same route, there is less traffic and the average speed is 30 km h^{-1} . What is the average speed for Abdul's trip?
9. An artificial satellite is moving in a circular orbit of radius 42250 km. Calculate its speed if it takes 24 hours to revolve around the earth.
10. A train starting from a railway station and moving with uniform acceleration attains a speed of 40 km/h in 10 minutes. Find its acceleration.
2. What is the physical state of water at:
a. 250°C b. 100°C ?
3. For any substance, why does the temperature remain constant during the change of state?
4. Why should we wear cotton clothes in summer?
5. Why are we able to sip hot tea or milk faster from a saucer rather than a cup? Why is ice at 273 K more effective in cooling than water at the same temperature?
6. A diver is able to cut through water in a swimming pool. Which property of matter does this observation show?
7. Why does a desert cooler cool better on a hot dry day?
8. What type of clothes should we wear in summer?
9. Why does our palm feel cold when we put some acetone or petrol or perfume on it?
10. Give two reasons to justify—
(a) water at room temperature is a liquid.
(b) an iron almirah is a solid at room temperature.

BIOLOGY

1. Why is the cell called the structural and functional unit of life?
2. How do substances like CO_2 and water move in and out of the cell? Discuss.
3. If the organisation of a cell is destroyed due to some physical or chemical influence, what will happen?
4. Who discover living cell. Give example
5. What is modern cell theory example
6. How does an Amoeba obtain its food?
7. Give function of cell membrane.
8. Which type of cell division is required for growth and repair of body and which type is involved in formation of gametes?
9. Make a comparison and write down ways in which plant cells are different from animal cells.

CHEMISTRY

1. Convert the following temperature to celsius scale:
a. 300 K b. 573 K

10. How is a prokaryotic cell different from a eukaryotic cell?
 11. What is osmosis?

MATH'S

1. Classify the following polynomials as linear, quadratic and cubic. Also identify monomial, binomial, trinomial and multinomials:
 (i) $5x^2-3$ (ii) $\sqrt{7}x^3-2x^2+3x-1$
 (iii) $5t - \sqrt{3}$ (iv) $4x^3$
2. Find the value of $f(x) = 4x^3-3x^2+5x+7$ at $x = -2$
3. Write of the following algebraic expression are polynomials in one variable? If so. Write their degree.
 (i) $9t^5-\frac{2}{3}t^3+\sqrt{7}t + 9$ (ii) $7x^3-\frac{3}{x^2} + \sqrt{5}$
 (iii) $5x^3-5x^2+7\sqrt{x}-1$ (iv) $2-y^2-y^3+7y^8$
4. Identify the following polynomial as monomials, binomials, Trinomials and multinomials:
 (i) $5t^3$ (ii) $5x^4-3x^2+5x+\sqrt{3}$
 (iii) $5x^7-5x^2+\pi$ (iv) $\sqrt{7}t^5+\frac{2}{3}$
5. Classify the following polynomials as constant, linear, quadratic, cubic and biquadratic. Also find the number of terms in each
 (i) $\sqrt{7}y^2-5y+4\sqrt{3}$
 (ii) $7x^4-3x^2+\sqrt{13}x+\pi$
 (iii) 3 (iv) $5r^2$
6. Find $p(0)$, $p(1)$ and $p(-2)$ for each of the following polynomials
 (i) $p(t) = 2 + t + 2t^2 - t^3$
7. If $f(x) = 5x^2-4x+5$ find $f(1)+f(-1)+f(0)$
8. For the polynomial $\frac{3x^2+5x^3+1}{4} - \frac{7}{3}x^4 - x^6$ write
 (i) the degree of the polynomial
 (ii) the coefficient of x^3
 (iii) the coefficient of x^6
 (iv) the constant term
9. Draw the graph of the following polynomials
 (i) $x+y=7$ (ii) $2x-3y=6$
10. Find the four solution of the following polynomials.
 (i) $y = 2x+1$ (ii) $x-y = 3$