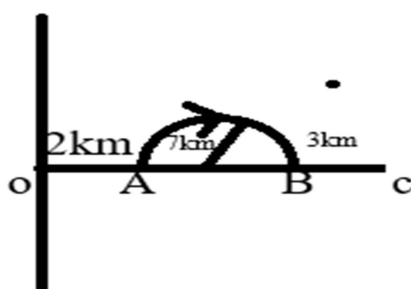# NEW STANDARD ACADEMY

Marks: 80

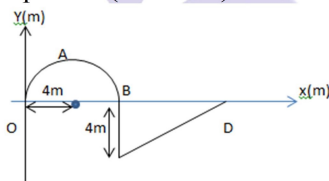Date : 21-04-25   CLASS : 9TH Time: 3 hours.

PHYSICS

1. What is the difference between distance and displacement?
2. A person goes 10m in east direction then turns left and goes 20m and finally turns towards west and goes 20m . How much distance person has travelled?
3.

Distance covered in total journey (OABC)

4. Define scalar quantity Write 4- scalar quantity
5. Define vector quantity .Write 4 vector quantity.
6. Convert SI System to CGS system of following quantities-
   (a) Universal gravitational constant (G)
   (b) Density
7. Write the unit of following quantities Pressure ,Volume ,Force ,velocity
8. Find the displacement of the path travelled by a person (OABCD)

9. A person moves 10km in east & then turn towards North and goes 12km .Then find how much way person is from initial position
10. Why distance cannot be negative? explain.

CHEMISTRY

1. Give reasons for the following observation: The small of hot sizzling foo0d reaches you several metres away, but to get smell from cold food you have to go close.
2. What are the characteristics of the particles of matter?
3. Define diffusion with examples. What is the decreasing order of diffusion of the particles of solids liquids and gases?
4. Why do gases and liquids flow?
5. Why do liquids and gases take the shape of the container?
6. Discuss the factors affecting diffusion.
7. Boiling point of methanol is 64^{0}C. What is the boiling point on Kelvin scale?
8. Convert the following temperatures on Celsius scale.
   (a) 0 K   (b) 173K
9. Why and which contains more heat ,1 kg ice at 0^{0}C or 1 kg water at 0°C?
10. Define the term freezing.

BIOLOGY

1. Who is the given the unit membrane model explain it?
2. What is drawback of unit membrane model?
3. Who is the given the fluid mosaic model explain briefly?
4. What is function of plasma membrane?
5. What is osmosis define it ?
6. What is cell theory?
7. What is the chemical nature of plant, bacteria and fungal cell wall ?
8. Why cell is the structural and functional unit of body?
9. Draw label diagram of bacteria
10. What is compound microscope?

MATH

1. Write the coefficient of x^2 in each of the following polynomials .Also write the number of terms and the degree of each of the following polynomials
   (i) $(2x+5)(2x^2+3x+4)$
   (ii) $3+5x-12\sqrt{5}x^2 + 15x^7$
2. If $f(x) = 3x^3-4x^2+17x-8$, find :
   (i) f(2)   (ii) f(-3)
3. Find the values of p(0) ,p(1) and p(2) for each of the following polynomials:
   $P(t)= 2+3t+2t^2-5t^3$
4. Verify whether the indicated numbers are zeroes of the polynomial or not.

$P(x) = 7x^2 - 1; x = \frac{1}{\sqrt{7}}, -\frac{1}{\sqrt{7}}$

5. If x = 0 and x = -1 are the zeroes of the polynomial $f(x) = 2x^3 - 3x^2 + ax + b$, find the values of a and b.

6. If $p(x) = x^3 + 3x^2 - 2x + 4$. Then find the value of $p(2) + p(-2) - p(0)$.

7. If $p(x) = x^4 - 2x^3 + 3x^2 - ax - b$, when divided by x-1, the remainder is 6, then find the value of a+b.

8. Find the value of 'a' if remainder is same when polynomial $f(x) = x^3 + 8x^2 + 15x + ax - 6$ is divided by (x+2) or (x+1).

9. Use Remainder Theorem to find the remainder when $f(x)$ is divided by g(x) in the following $f(x) = x^2 - 5x + 7, g(x) = x + 3$

10. The polynomials $ax^3 - 3x^2 + 4$ and $2x^3 - 5x - a$ when divided by (x-2) leave the remainder p and q respectively. If p-2q = 4, then find the value of a.