

ADMISSION TEST TO GRADE: 8
SCIENCE
KEY

Q. 1. Choose the best option.

- (i) D (ii) A (iii) A (iv) D (v) A (vi) D

Q. 2 Fill in the blanks.

- (i) third (ii) solid (iii) convection (iv) Combustion (v) drying (vi) taproot

Q. 3 True/False

- (i) F (ii) T (iii) T (iv) F (v) F (vi) F

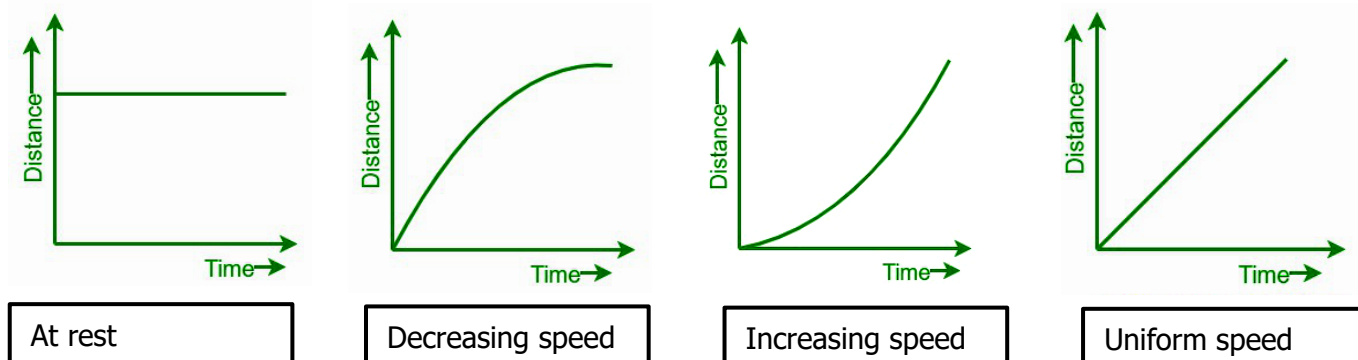
Q. 4 Answer the following questions.

- (i) In transpiration, water is lost from the stomata in the leaf. As the water evaporates from the leaves, more is pulled up through the xylem to replace it. The main force which draws water up the plant is called transpiration pull.
- (ii) Right atrium: It receives oxygen-poor (deoxygenated) blood from the body and pumps it to the right ventricle.
Left atrium: Receives oxygen-rich (oxygenated) blood from the lungs and pumps it to left ventricle.
- (iii) Increase in temperature: decrease in the solubility.
Increase in pressure: increase in solubility.
- (iv) Hydrogen atom has 1e which is present in K shell and requires one more to get stable. It shares one electron with another hydrogen atom. By sharing, each hydrogen atom attains noble gas configuration of Helium. As a result hydrogen molecule is formed in which an electron pair is shared and a covalent bond is formed.

(v)

CONDUCTION	RADIATION
Method of heat transfer from hot body to cold body by vibrations of particles.	Method of heat transfer from a hot place to a cold place with or without having a material medium in between, in the form of electromagnetic waves.

(vi) Interpretation of distance-time graphs.



MATHEMATICS- 8

ANSWER KEY

1. (i) diameter (ii) -1 (iii) 3 (iv) 16

2. $A = \{b, a, g\}$, $B = \{a, e, i, o, u\}$ & $C = \{a\}$

L.H.S: $A \cap (B \cap C)$

$B \cap C = \{a, e, i, o, u\} \cap \{a\} = \{a\}$

$A \cap (B \cap C) = \{b, a, g\} \cap \{a\} = \{a\}$

As L.H.S = R.H.S

So $A \cap (B \cap C) = (A \cap B) \cap C$

RHS: $(A \cap B) \cap C$

$A \cap B = \{b, a, g\} \cap \{a\} = \{a\}$

$(A \cap B) \cap C = \{a\} \cap \{a\}$

$= \{a\}$

3. $4m^2 - 25n^2 = (2m)^2 - (5n)^2$

As $a^2 - b^2 = (a + b)(a - b)$

$4m^2 - 25n^2 = (2m)^2 - (5n)^2 = (2m + 5n)(2m - 5n)$

4. Area of circle = πr^2

$= (3.14)(50m)^2$

$= (3.14)(2500)m^2$

$= 7850m^2$

5. $(\frac{2x}{3} + 3y)^2$

As $(a + b)^2 = a^2 + 2ab + b^2$

$(\frac{2x}{3} + 3y)^2 = (\frac{2x}{3})^2 + 2(\frac{2x}{3})(3y) + (3y)^2$

$= \frac{4x^2}{9} + 4xy + 9y^2$

6. Method # 1:

Remaining persons = $550 - 50 = 500$

1 month = 30 days

Let x be the required number of days

↓	Persons	↑	time (days)	
	550		30	(inverse proportion)
	500		x	

$550 : 500 :: x : 30$

$550 \times 30 = 500 \times x$

$\frac{550 \times 30}{500} = x$

$\frac{55 \times 3}{5} = x$

$x = 11 \times 3 = 33$

So food will be last for 33 days.

Method # 2:

Remaining persons = $550 - 50 = 500$

Let x be the required number of months

↓	Persons	↑	time (month)	
	550		1	(inverse proportion)
	500		x	

$550 : 500 :: x : 1$

$550 \times 1 = 500 \times x$

$\frac{550 \times 1}{500} = x$

$\frac{550}{500} = x$

$x = 1.1$

so food will last for 1.1 months.

7. diameter = 49cm

Circumference = πd

$= \frac{22}{7} \times 49\text{cm}$

$= 22 \times 7\text{cm}$

$= 154\text{cm}$

Total distance covered by circular object = number of rounds \times Circumference

$770\text{cm} = \text{number of rounds (revolutions)} \times 154\text{cm}$

$\frac{770\text{cm}}{154\text{cm}} = \text{number of rounds}$

number of rounds = $\frac{110}{22} = 10/2 = 5$

8. Area of Square shaped garden = 4096m^2

As Area of square = l^2

$$l^2 = 4096 \text{ m}^2$$

Taking square root on both sides

$$\sqrt{l^2} = \sqrt{4096\text{m}^2} \quad \text{so } l = \sqrt{4096} \text{ m}$$

Method#1

$$\begin{aligned}\sqrt{4096} &= \sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2} \\ &= \sqrt{2^2} \times \sqrt{2^2} \times \sqrt{2^2} \times \sqrt{2^2} \times \sqrt{2^2} \times \sqrt{2^2} \\ &= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \\ &= 64\end{aligned}$$

So length of each side is 64 m

$$\text{Perimeter} = 4 \times l$$

$$= 4 \times 64 \text{ m}$$

$$= 256 \text{ m}$$

So length of fence is 256 m

Method#2

$$\begin{array}{r} 64 \\ 6 \overline{) 4096} \\ \underline{36} \\ 496 \\ 124 \overline{) 496} \\ \underline{496} \\ 0 \end{array}$$