Part - II
Section - I

Q#04:

(a)

Temperate Cyclones:

(i) Origin and formation:

Temperate cyclones form in mid-latitude (30°-60°) due to temperature contrast between polar and tropical air masses.

(ii) Structure:

Temperate cyclones have asymmetrical structure with distinct cold and warm fronts

(iii) Size and lifespan:

Temperate cyclones are larger but less intense.
Their lifespan is usually 5-7 days.

(iv) Seasonal Occurance:

Occur year-round but are strongest in winter. Temperate cyclones disrupt transport and agriculture through snowstorm.

Tropical Cyclones:

(i) Origin and formation:

Tropical cyclones develop over warm tropical oceans, between 5°-30° latitude in both hemispheres

(ii) Structure:

Tropical cyclones have a symmetrical structure with a central eye which is surrounded by an eyewall.

(iii) Size and lifespan:

Tropical cyclones are compact and highly intense. Wind speed can exceed 250km/h They have a short life span

(iv) Seasonal Occurance:

Tropical cyclones are at peak during late summer. They occur year-round.

Tropical cyclones cause catastrophic damage by flooding and high winds.

(d)

Conductors:

Conductors are the material which allow the flow of electric charges with little resistance. They have free electrons that can move easily through the material.

Example:

Metals like copper, silver etc.

Semiconductor:

Semiconductors are the materials that have electrical conductivity between that of conductor and insulators.

Date: Day:

Section-II

Q#07:

(a)

Sum of two numbers is 23.

$$x + y = 23$$

$$y = 23 - x \longrightarrow (1)$$

The product of two numbers is 132

$$x \cdot y = 132 \longrightarrow (2)$$

Putting value of y from equ 1

$$x \cdot (23 - x) = 132$$

$$23x - x^2 = 132$$

$$23x - x^2 - 132 = 0$$

$$-23x + x^2 + 132 = 0$$

$$x = \frac{-(-23) \pm \sqrt{(-23)^2 - 4(1)(132)}}{2(1)}$$

$$x = \frac{23 \pm \sqrt{529 - 528}}{2}$$

$$x = \frac{23 \pm \sqrt{1}}{2}$$

$$x = \frac{23 \pm 1}{2}$$

$$x = \frac{23 + 1}{2} \qquad x = \frac{23 - 1}{2}$$

$$x = 24/2 \qquad x = \frac{22}{2}$$

$$\boxed{x = 12} \qquad \boxed{x = 11}$$

Date: _____ Day: _____

The two numbers are **11** and **12** their sum is **23** and product is **132**.

(b)

40% of a number is more than 20% of 650 by 190.

$$0.2 \times 650 = 130$$

$$0.4x = 130 + 190$$

$$0.4x = 320$$

(C)

$100\% - 20\% = 80\%$

$$80\% = 70 \text{ Million}$$

$$0.8M = 70M$$

$$M = \frac{70}{0.8} = 87.5M$$

(d)

Increase in number = 10/

Decrease in number = 10/

net change = 0.

Q#08:

(a)

Area = side^2

side = $\sqrt{289}$ = 17ft

Perimeter = 4 x side

4x17 = 68ft

Price per foot = 58

= 68 x 58

= 3944

(b)

Manager's Salary = x

Salary of 24 employees

24x15000 = 360000

Salary of 24 employees and manager

$25 \times 19000 = 475000$

$x = 475000 - 360000$

$x = 115000$

Manager's Salary is 115000.

(d)

My uncle ➡ Father's or mother's brother

Father of my uncle ➡ Grandfather

Daughter of grandfather ➡ aunt

Son of that daughter ➡ aunt's son

The boy is her cousin