

Part - II

Section - A

Q.No. 4

(a) Explain the role of heart and blood vessels in circulation

Introduction:

Heart is a strong muscular organ which pumps the blood towards the body. It is surrounded with three main layers. It maintains the flow of blood by contraction and relaxation. Blood vessels are pathways for the circulation of blood.

Role of Heart :-

- (a) The heart ^{is a} pumping organ. It pumps the oxygenated blood to all parts of the body and sends deoxygenated blood to the lungs for the purification.
- (b) In humans, heart maintains the circulatory system, ensuring that oxygenated and deoxygenated blood remains separate.

(c) The heart regulates the blood pressure in the body. It maintains blood pressure during rest and the activity.

(d) The heart maintains the supply of the blood in the body.

(e) Human heart is mainly responsible for the circulation of the blood in the body with the pathways.

Role of blood vessels: -

(a) Blood vessels are extensive network that transport blood to the heart and from the heart to the whole body.

(b) Arteries carries oxygenated blood except pulmonary artery away from the heart to the body.

(c) Veins carries deoxygenated blood except pulmonary veins toward the heart from the body.

(d) capillaries connects the arteries and veins. These blood vessels facilitates the gaseous exchange.

DAY: _____

DATE: _____

in the body.

c) Blood vessels maintains the blood pressure in the body.

d) Gaseous exchange, nutrients, and waste products between blood and body takes place through the blood vessels.

Conclusion:-

In the circulatory system, heart is the main organ while the blood vessels are helper of the heart in the body. Due to heart and blood vessels the circulation of the blood in the body remains efficient.

(B) what is cyclone? Describe the formation of cyclone.

Introduction:

A cyclone is a low-pressure area surrounded by high pressure areas from all sides. It is circular or elliptical in shape. cyclones are often associated with winds, heavy rainfall, and thunder storms. In the

cyclones winds move from the periphery towards the central low pressure zone. It is Anticlock wise, in Northern hemisphere and clockwise in the southern hemisphere.

Formation of a cyclone:

The formation of a cyclone occurs through a well defined stages and favorable conditions.

1. Warm ocean water:

cyclone develop over warm seas. Warm water provides the necessary heat and the moistures that is required for the formation of the cyclone.

2. Low- pressure development:

calm air, Highly saturated atmosphere, intense heating of the atmosphere creates a low pressure near the surface of the ocean. which is resultant in the formation of the cyclone.

3. Cloud formation:

As the warm air rises, it cools and

condenses to form cloud. This process releases heat which causes the warm air and low pressure is developed which is suitable for cyclone formation.

4- Coriolis force:

The rotation of the earth causes the incoming air to deflect, producing a spiral circulation around the low-pressure center. The Coriolis force is essential for the formation of the cyclone.

5- organization and Intensification:

With the constant supply of heat and the moisture, system becomes more organized. Strong winds develop around the center which is responsible for the cyclone formation.

6- conditions for formation:

Calm air, highly saturated atmosphere, intense heating of the air are the suitable conditions that are responsible for the formation of the cyclone.

Conclusion:

A cyclone is a powerful atmospheric disturbance formed due to the interaction of warm ocean waters, low pressure, and cloud formation. It is the formation of process that explains the complex nature of the atmosphere and energy transfer.

(C)

Enlist the Function of Carbohydrates:

- (i) Carbohydrates are the primary source of the energy for the body.
- (ii) They provide energy for the functions of brain and nervous system.
- (iii) Carbohydrates are used as a source of proteins.
- (iv) They are involved in the absorption of the fats.
- (v) Carbohydrates help in the process of the digestion in the body.

Proteins:-

- (i) Proteins are essential for the growth of the body tissues.
- (ii) Proteins are involved in the formation of the enzymes.
- (iii) Proteins helps the body to balance.
- (iv) Proteins plays an important role in the muscle contraction.
- (v) Proteins are involved in the formation of antibodies in the body.

Fats:

- (i) Fats are source of energy in the body.
- (ii) Fats help in absorption of fat-soluble vitamins.
- (iii) Fats protects many organs and provide insulation.
- (iv) Fats are essential component of cell membrane.
- (v) Fats provide essential fatty acids for the normal growth and the health.

Calcium:

- (i) Calcium is the essential for the formation of the bones.
- (ii) Calcium is involved in the blood clotting process.
- (iii) Calcium plays a key role in the muscle contraction.
- (iv) Calcium helps in the activity of enzymes in the body.
- (v) Calcium is essential for the formation of teeth.

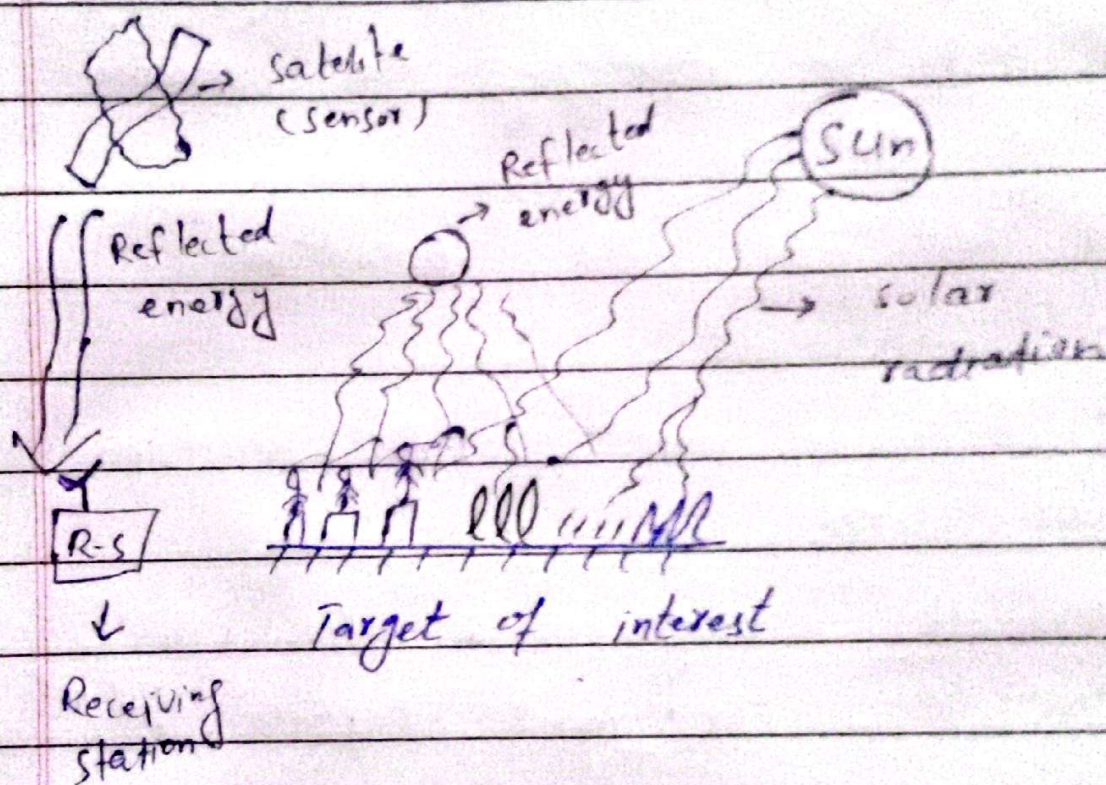
Iron:

- (i) Iron is necessary for the formation of haemoglobin in red blood cells.
- (ii) Iron is involved in the process of the oxygen transport in the blood.
- (iii) Iron is necessary for the energy production.
- (iv) Iron prevents iron-deficiency syndrome anemia.
- (v) Iron is involved in the immune system function.

(d) Remote sensing

Introduction:

Remote sensing is a science to gather a information related to any geographic area by using the sensors. It is used to recognize a macro pattern at any geographic location.



Applications of Remote Sensing

- i) Remote sensing helps in the recognition of macro-pattern located at any geographic location. In this macro-pattern is forest, ocean etc.

DAY: _____

DATE: _____

- (i) Remote sensing helps in environmental monitoring.
- (ii) It helps in urban management.
- (iii) It helps in disaster management.
- (iv) Remote sensing is time saving phenomena.
- (v) Remote sensing helps in accessing the inaccessible areas.
- (vi) It helps in agricultural management.
- (vii) It helps in identifying the source of pollution.
- (viii) It helps in the pollution management.
- (ix) It helps in monitoring Air pollution.

Conclusion:

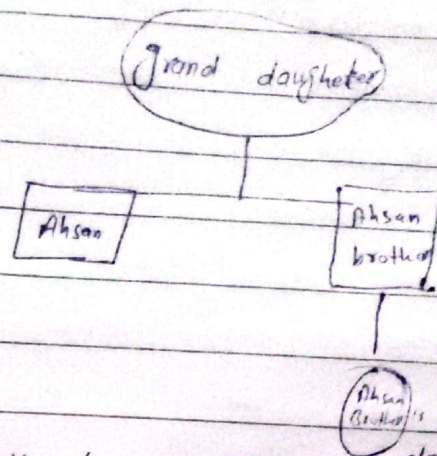
Remote Sensing is a powerful tool for environment purpose. It provides the concise data in less time that helps to monitor environmental change. In the contemporary world, it is very efficient.

Section - B

Q No. 6

(A)

The woman is Ahsan's mother.



My brother's only daughter daughter

= Ahsan's niece

The woman is granddaughter of Ahsan's niece.

(B)

Length : Breadth = 3:2

Speed = 12 Km/hr = $\frac{12 \times 1000}{60} = 200 \text{ m/min}$

Time = 8 minutes

Distance covered in 8 minutes = 200×8

= 1600 m

Perimeter = $2(L+B)$ - Ratio $L:B = 3:2$ let $L = 3x$ $B = 2x$ = $2(3x + 2x) = 10x$ 800 m $5x = 800 \text{ m}$ $x = 160 \text{ m}$

DAY: _____

DATE: _____

$$\text{Area of Park} = L \times b$$

$$A = 480 \times 320$$

$$= 153600 \text{ sq.m}$$

(c)

unit digit exceeds tens digit by 2

product of number and sum of digit = 144

let tens digit = x

unit digits = $x+2$

$$\text{Number} = 10x + (x+2) = 11x + 2$$

$$\text{Sum of digits} = x + (x+2) = 2x + 2$$

$$(11x+2)(2x+2) = 144$$

$$2(11x+2)(x+1) = 144$$

$$(11x+2)(x+1) = 72$$

$$\text{let } x = 2$$

$$2(11(2)+2)(2+1) = 72$$

$$(22+2)(3) = 72$$

$$24 \times 3 = 72$$

$$\text{Number} = 24$$

DAY: _____

DATE: _____

(D)

The number in the ratio 2:3

let the number

$2x$ and $3x$

L.C.M is $6x$

$$6x = 48$$

$$x = 8$$

The two number are

$$2x = 2 \times 8 = 16$$

$$3x = 3 \times 8 = 24$$

$$16 + 24 = 40$$

The sum of the number is
40.