Q. No. 2 Part (i) سوال نمبر 2 جز (i)

PLASMA (LIQUID PART)

In Human blood, Plasma is present by 55% volume in it. In it's composition, water is present by 90%, proteins are present by 7-8%. & other organic or inorganic substances are 2-3% by Volume. Plasma has 90% of water in it. Water keeps the blood flowing & blood keeps the cells wet, which enables circulation and life. More water content in plasma causes the human blood to flow continiously. Continious flow of blood is the sign of life.

Q. No. 2 Part (ii) سوال نمبر 2 جز (ii)

"CHROMATIN NETWORK"

Every cell has a nucleus in between, which is an vital organ of cells. It contains special thread like structures known as "Chromosomes", it is present as a network before the start of cell division, known as "Chromatin Network". Chromosome is observed as an independant individual at the start of cell division.

Q. No. 2 Part (iii) سوال نمبر 2 جز (iii)

-: GENETIC ENGINEERING IN THE FIELD OF AGRICULTURE :-

Genetic Engineering refers to the manipulation of genes to cancel out undesirable genes & introduce desirable genes for better productivity. In Agriculture, Genetic Engineering plays a vital role by introducing better yeild crop. With the help of genetic engineering, the production of a crop per acre has increased providing prosperity to both grower & country. Through genetic engineering & cross breeding, better livestock occurs, which provides more milk & flesh. Production of resistant varieties has been increased preventing from insects & fungi, with help of genetic engineering.

Q. No. 2 Part (iv) سوال نمبر 2 جز (iv)

-: BASIC PRINCIPLES OF FIRST AID :-

There are three main principles of first Aid :-

- Restoration of Airway.
- Restoration of Breathing.
- Restoration of Circulation.

Q. No. 2 Part (v) سوال نمبر 2 جز (v)

-: CHANGES OF FOOD ENERGY :-
ACCORDING TO TEMPERATURE

COLD REGIONS :-

In Cold Regions or climate more energy is required. So, people consume more food, with high components of fats, carbohydrates, proteins to get as much energy to cope with temperature, as it will keep body warm.

HOT REGIONS OR CLIMATE :-

In Hot regions or climate relatively less energy is required as compared to cold climate. So, small diet of portions is consumed with lots of water to cool down body.

Q. No. 2 Part (vi) سوال نمبر 2 جز (vi)

-: AFFECTS OF DEFORESTATION ON ENVIRONMENT :-

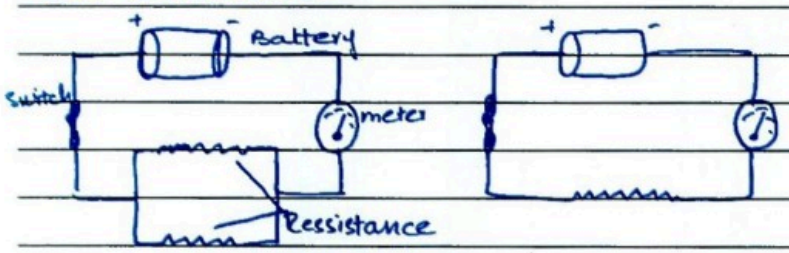
Deforestation hinders the ecosystem in so many ways :-

- Deforestation causes economical loss of a country. Printing of currency will be slow.
- Deforestation will affect climate.
- Deforestation will affect soil fertility.
- Forests stop floods. Deforestation will destroy lands.
- Deforestation will cause for the production of oxygen to be less.
- There will be more carbondioxide in atmosphere as no forest or trees are available for consumption of CO_2.

Q. No. 2 Part (vii) (vii) سوال نمبر 2 جز

-: PARALLEL COMBINATION OF RESISTANCES :-

In Parallel combination of resistances, in a circuit the resistance parralel gives independant path for current to flow in a circuit. The more resistance or resistor equals to more current flow, meaning less resistance.



Q. No. 2 Part (viii) (viii) سوال نمبر 2 جز

-: MAIN SWITCH :-

The live wire & neutral wires coming from power pole connects to the main switch in a house electric system. The power supply in the house depends upon "Main Switch". Main switch has the control over power supply. It supplies electricity throughout the house. The flow of power supply in house depends upon whether the switch is on or off. If the main switch is on, electricity is supplied in the house. If main switch is off, flow of electricity is blocked.

Q. No. 2 Part (ix) سوال نمبر 2 جز (ix)

MAIN OBJECTIVES OF PAKISTAN'S -: NUCLEAR PROGRAM :-

- Nuclear Program for betterment of humanity.
- Nuclear technology to improve economy of country.
- Nuclear program for study of space, technology & atmosphere, environment.
- Atomic energy to be used or applied in agriculture & medicine.

Q. No. 2 Part (x) سوال نمبر 2 جز (x)

-: ULTRASOUND BETTER THAN X-RAY :-

- Ultrasound is more preferable than X ray because it is much safer & does not produce harmful radio waves.

- X-ray releases harmful radiations or radio waves, which is harmful to man. Ultrasound provides safety & does not release harmful radio waves.

Q. No. 2 Part (xi) سوال نمبر 2 جز (xi)

" ECOSYSTEM"

It is a system where all living organism like plants, animals & humans live together and depend on eachother for survival.

FOR EXAMPLE:-

Plants provide oxygen and food to animals and human which keeps them alive.

Animals & humans respirate or exhale carbondioxide, which is used by green plants to make food & oxygen in presence of chlorophyll & sunlight.

Q. No. 2 Part (xii) سوال نمبر 2 جز (xii)

-: PLASTIC RECYCLING :-

Plastic recycling is relatively bit harder than paper and other material's recycling. It is because all plastics are of different types and shapes.

To recycle plastic, it is first cut into small peces, then it is melted and at last it is welded or molded into small pellets. These pellets can then be molded into any shape and size according to preference.

(Section C)

Q. No. 3 (Page 1) سوال نمبر 3 (صفحہ 1)

HUMAN BLOOD CELLS

The volume or composition of human blood cells in human blood is 45%.

TYPES OF HUMAN BLOOD CELLS :-

There are three types of human blood cell.

RED BLOOD CELLS :- ERYTHROCYTES

Red blood cells are the most numerous in the human blood. Every cubic millimeter of blood contains 5 million red blood cells. (RBC) has a protein "Heamoglobin" in it, which supplies oxygen to cells. It has the property of attaching dissolved oxygen to itself and giving it off to cells. Heamoglobin gives red colour to blood. Hence Red blood cells contains oxygen which flows in blood.

WHITE BLOOD CELLS :- LEUKOCYTES

White blood cells are colourless & irregular in shape. Each cubic millimeter of blood contains 5000 - 6000 white blood cells in it. White blood cells help create antibodies against disease.

There are two functions of white blood cells:-

Q. No. 3 (Page 2) سوال نمبر 3 (صفحہ 2)

- To engulf or destroy bacteria and virus.
- To create antibodies against a disease which has entered the body, to make the body immune against the disease.

White blood cells has a nucleus in between.

PLATELETS :- THROMBOCYTES

Platelets are smaller than white blood cells and red blood cells. They are filaments of bone marrow and without nucleus.

It helps clot blood in case of an injury.

It stops the wound from bleeding.

DIAGRAM :-

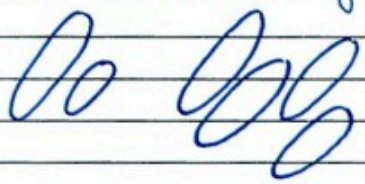
RED BLOOD CELLS :- Erythrocytes



WHITE BLOOD CELLS :- Leukocytes



PLATELETS :- Thrombocytes



Q. No. 3 (Page 3) سوال نمبر 3 (صفحہ 3)

Q. No. 4 (Page 1) سوال نمبر 4 (صفحہ 1)

FAT SOLUBLE VITAMINS :-

- Vitamins are essential components needed by our body for proper growth of the body and muscles. Some vitamins are water soluble, while some are fat soluble.

- Vitamins which can be ~~solved in~~ dissolved in fats are fats soluble.

FAT SOLUBLE VITAMINS :-

- **VITAMIN A :-**

Vitamin A is essential for proper growth of the body, specially for children. Its deficiency causes night blindness & hinders growth for children. It is found in wheat, rice, pulses, nuts, yellow of eggs, fruits, beet root etc.

Q. No. 4 (Page 2) سوال نمبر 4 (صفحہ 2)

-VITAMIN D:-

Vitamin D provides the body with calcium & phosphorus. Its deficiency causes weakness of bones.
It is found in cod-liver oil, egg, rice, pulses, milk etc. Our skin synthesizes vitamin D from sunlight.

-VITAMIN E:-

Vitamin E regulates the working of Nervous system. In its absence, Vitamin A and D will not work. It is found in meat, liver etc. It is also found in wheat, eggs, nuts, pulses, beetroot etc.

-VITAMIN K:-

Vitamin K performs many activities. It coregulates the flow of blood or coagulates. It maintains the working of liver. Its deficiency causes relative problem. It deficiency causes for blood to flow through wounds. Its deficiency causes malfunctioning of liver. It is found in meat, pulses, grains etc.

Q. No. 4 (Page 3) سوال نمبر 4 (صفحہ 3)

Q. No. 5 (Page 1) سوال نمبر 5 (صفحہ 1)

DIVISIONS OF SPARCENT:-

Pakistan made an organization named Space & Upper Atmosphere Research Commission (SUPARCO) after realizing the importance of Space technology.

"SUPARCO" is the example of Pakistan's commitment towards Space technology.

"SUPARCO" has its research centre in Sonmiani near Karachi. It has fired many rockets.

"SUPARCO" established a Research Centre of Pakistan known as "Space & Atmosphere Research Centre". known as "SPARCENT".

SPARCENT has its divisions for research of space.

Q. No. 5 (Page 2) سوال نمبر 5 (صفحہ 2)

- Its divisions and its functions are listed below :-

- **REMOTE SENSING & ATMOSPHERE DIVISION:-**
In this division of "SPARCENT", research is done related to remote sensing. For instance, weather sensing, pollution sensing etc.

- **ENVIRONMENT & SPACE SCIENCE RESEARCH DIVISION:-**
In this division of sparcent, it conducts research related to space science & environment. It learns about space and its interesting facts.

- **IONOSPHERIC RESEARCH DIVISION:-**
In this division of SPARCENT, research is done regarding "Ionosphere" and it's activity. They learn about Ionosphere. Study is given regarding Ionosphere.

- **SATELLITE COMMUNICATION DIVISION:-**
This division, ensures round the clock communication with satellite on ground. It builds ground station and sends satellite to space, to communicate with radio signals to & from space on ground stations.

Q. No. 5 (Page 3) سوال نمبر 5 (صفحہ 3)