Q. No. 2 Part (i) Importance of Plasma in Blood Circulation (i) سوال نمبر 2 جز

Ans: Plasma, the liquid part of blood makes up 55% of bloods total volume. It 90% water and ~~acts~~ allows blood to flow. Its importance is in the following:

i) Plasma transports nutrients where they are needed.

ii) Plasma allows wastes to be excreted.

iii) Plasma carries hormones where they are needed.

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

Ans: In the nucleus of the cell, which is the most vital organ of the cell, thread-like structures can be found which are called chromosone. Chromosones are made up of Protien and DNA and are present in a network which is called chromatin network. Chromatin Network is present in the nucleus of cells and is essential for the genetic system of cells.

Q. No. 2 Part (iii) Genetic Engineering in Agriculture (iii) سوال نمبر 2 جز

Ans: With the contributions in science, measures have been proposed to enhance agriculture by genetic engineering as listed below:

High yield Varieties: Genetic engineering is being used to increase crop per acre.

Production of resistant varieties: Genetic engineering helps produce crops which are resistant to bacteria and virus.

Use of fungicides and Insecticides: With science being introduced to agriculture, the use of fungicides and insecticides have been beneficial.

Q. No. 2 Part (iv) Principles of First Aid. (iv) سوال نمبر 2 جز

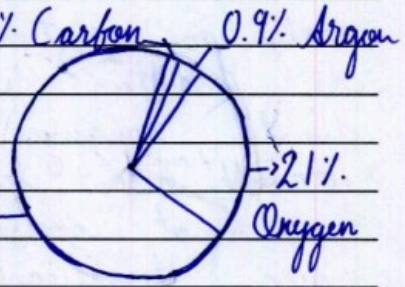
Ans: First aid is the basics of medical knowledge and is used in emergency situations. The fundamental principles of first aid are:

(i) Restoration of Breathing.
(ii) Restoration of airway.
(iii) Restoration of circulation.

These are the first priorities when an emergency situation occurs.

Q. No. 2 Part (v) Composition of Atmosphere (v) سوال نمبر 2 جز

Ans: The composition of the atmosphere is: 78% Nitrogen, 21% Oxygen
0.9% Argon and other gases.
0.03% Carbon Dioxide.



These are the major gases that make up the atmosphere.

Q. No. 2 Part (vi) Affect of Deforestation in Environment (vi) سوال نمبر 2 جز

Ans: With industrialization increasing in the recent years, deforestation has left lasting effects on environment such as:

i) Deforestation reduces air quality significantly.
ii) It has contributed to soil erosion.
iii) It endanger wild life with nowhere to go.
iv) Deforestation distrupts local ecosystems.

Q. No. 2 Part (vii) Importance of Tube Wells (vii) سوال نمبر 2 جز

Ans: Following the advancement of technology modern ~~technology~~, techniques have been introduced to agriculture such as tube wells and the extensive irrigation system of artificial watering. As Pakistan is a country with diverse climates ranging from extreme heat and ~~strength~~ draught to cold tempretures where water is not accessible, tube wells have been significanty impacted and have become necessary to some parts in Pakistan signifying their indespensible role.

Q. No. 2 Part (viii) Laser Light and Ordinary Light (viii) سوال نمبر 2 جز

i) Laser light is mono-chromatic.	i) Ordinary light is polychromatic.
ii) Laser light is of singular wavelength	ii) Ordinary light has multiple wavelengths.
iii) Laser light travels in a singular beam.	iii) Ordinary light spreads as it travels.

Q. No. 2 Part (ix) Objectives of Pakistans Nuclear Program. (ix) سوال نمبر 2 جز

Ans: Pakistans nuclear program has advanced significantly and achieved many great achievements. The main foundational objectives that the program was built on were:

i) Nuclear Technology for Economic Prosperity
ii) Nuclear Advancement to support its nuclear program
iii) Nuclear technology for betterment of Agriculture.

There were the defining objectives of Pakistans nuclear program.

Q. No. 2 Part (x) Ultrasound and X-rays. (x) سوال نمبر 2 جز

Ans: Ultrasound can be preferred over x-rays for numerous reasons such as:

i) X-rays emit radiation which is why ultrasound is safer for pregnant women and children.
ii) X-ray is mainly used for bones and cavities whereas ultrasound is used in a number of ~~fields~~ fields ie cardiology, gynecology as well as to examine other organs.
iii) Ultrasound can look in the interior of organs whereas x-ray is used for analyzing bones and teeth.

Q. No. 2 Part (xi) Importance of Textile in Pakistans Economy (xi) سوال نمبر 2 جز

Ans: The textile sector of Pakistan has greatly influenced the economy of Pakistan by increasing the rate of employment and international trade as well as the overall exports in the ~~country~~ country contributing to Pakistans global influence. The textile industry of Pakistan is evergrowing with its natural resources and minerals as well as cotton reserve. which has been extremely beneficial for the country.

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

Ans: Plastic is one of the most major pollutants worldwide which is why recycling of plastic has become so encouraged in recent years. The recycling of plastic reuses plastic components of previously manufactured items. This lowers the percentage of plastic in in landfills and garbage disposal in oceans contributing to a cleaner planet.

(Section C)

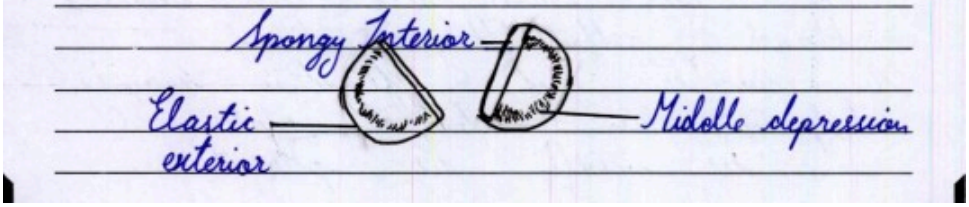
Q. No. 3 (Page 1) Human Blood Cells سوال نمبر 3 (صفحہ 1)

Ans: Cells in blood make up the blood by 45% in volume. These cells have various uses and functions and the most abundant in blood include those listed below in terms of abundance.

i) Red Blood Cells (Erythrocytes)
ii) White Blood Cells (Iwekocytes)
iii) Platelets (Trombocytes)

i) Red Blood Cells:

RBCs, also called erythrocytes are most numerous in blood and approximately 5 million in each cubic millimeter of blood. They have an average lifespan of 120 days until they eventually become fatigued and die off. They are created again in bone marrow, breast bone and ribs. Erythrocytes carry haemoglobin which has the capability to carry oxygen in blood to where it is needed and is essential for processes of life.



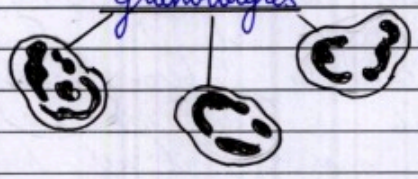
Q. No. 3 (Page 2) سوال نمبر 3 (صفحہ 2)

ii) White Blood Cells (Leukocytes):

White Blood Cells are colorless and irregular in shape and around 7000 to 8000 are found in every cubic millimeter of blood. They have a number of functions namely being one in the following:

i) They recognize foreign bacteria and viruses and engulf and digest them.

ii) Leukocytes aid in the production of antibodies which help us fight off diseases and harmful micro-organisms.

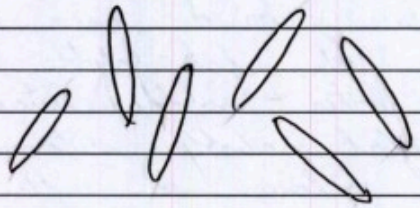


iii) Platelets:

Platelets are also called thrombocytes. They have a significantly less quantity in blood as compared to Red blood Cells and white blood cells. They have a number of function mainly helping in blood clotting as well as preventing

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

blood from flowing out of ruptured vessel and aid in healing of wounds.



Q. No. 4 (Page 1) Fat-Soluble Vitamins سوال نمبر 4 (صفحہ 1)

Ans: Vitamins are one of the essential nutrients needed for metabolic functions of the body. Vitamins are divided into 2 categories based on their solubility ie fat-soluble vitamins and water-soluble vitamin. The fat-soluble vitamins are listed below in the following

Vitamin A:

Vitamin A is essential for proper growth of body primarily in children. Its deficiency is severe and cause the condition night blindness. Vitamin A sources include maize, bajra and primarily carrots.

Vitamin D:

Vitamin D is necessary to consume ~~the~~ the minerals calcium and phosphorous and when vitamin D intake is not sufficient these minerals are not diffused and one becomes weak and stunted. Vitamin D can be consumed from food sources but our

primary source is the sun which our skin naturally synthesizes in sunlight.

Vitamin E:

Vitamin E is essential for the proper functioning of the immune system and when the amount of vitamin E in body is not sustained vitamin A and C are not diffused into the body and are not properly digested. Vitamin E can be found in various fruits and vegetables.

Vitamin K:

Vitamin K is needed for the coagulation of blood as well as the proper functioning of the liver. When vitamin K intake is not sufficient in the body the liver begins to malfunction and blood fails to clot properly. Vitamin K can be found in various meats but other sources include egg, broccoli, dry fruits etc.

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

Conclusion:

These are the fat soluble vitamins which are essential for the ~~metabolic~~ metabolic activities of the body which is why it is necessary to consume enough amount ~~of~~ so that is adequate for the functions the human body needs in order to carry out all constructive and deconstructive activities.

Q. No. 5 (Page 1) Magnetic Resonance Imaging سوال نمبر 5 (صفحہ 1)

Ans: MRI, which is the abbreviated form of magnetic Resonance Imaging is one of the finest examples of modern technology. It allows us to ~~look~~ examine the metabolic and cellular activity in the body and has expanded modern medicine greatly.

Working:

Our body is made up of millions of molecules and cells such as fats, protiens, carbohydrates, etc. These molecules include ~~a~~ hydrogen molecules which have NMR signals ie nuclear magnetic resonance. The nucleus of hydrogen ~~of~~ atoms have NMR and ~~the~~ an MRI machine basically images these signals and reformats them into cross sections of the body.

Uses of MRI Machine:

Magnetic resonance Imaging has multiple uses in modern medicine and has helped save lives by diagnosing severe disorders of

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

the body that average machinary cannot diagnose. These include some of the conditions listed in the following:

i) Brain Tumars
ii) Disorders of inner eye and ear
iii) Cancer
iv) Stroke and heart Disease
v) Disorders of joint and muscoo-skeletal issues.

Importance:

The MRI machine was a great achievement of modern medical technology and has proved to be an indispensable piece of machinery due to its efficiency in diagnosing disorders which are difficult to treat otherwise.

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

