

PART - II

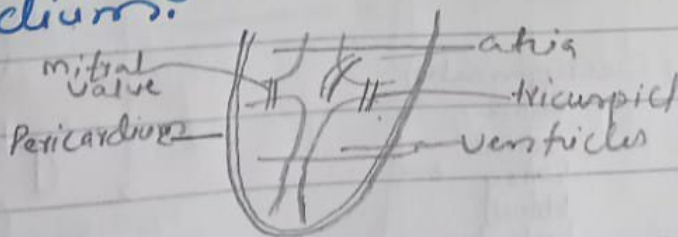
SECTION - I

ANSWER # 3(a)

Heart is the vital organ of the body. It is a pumping organ.

Structure of the human heart

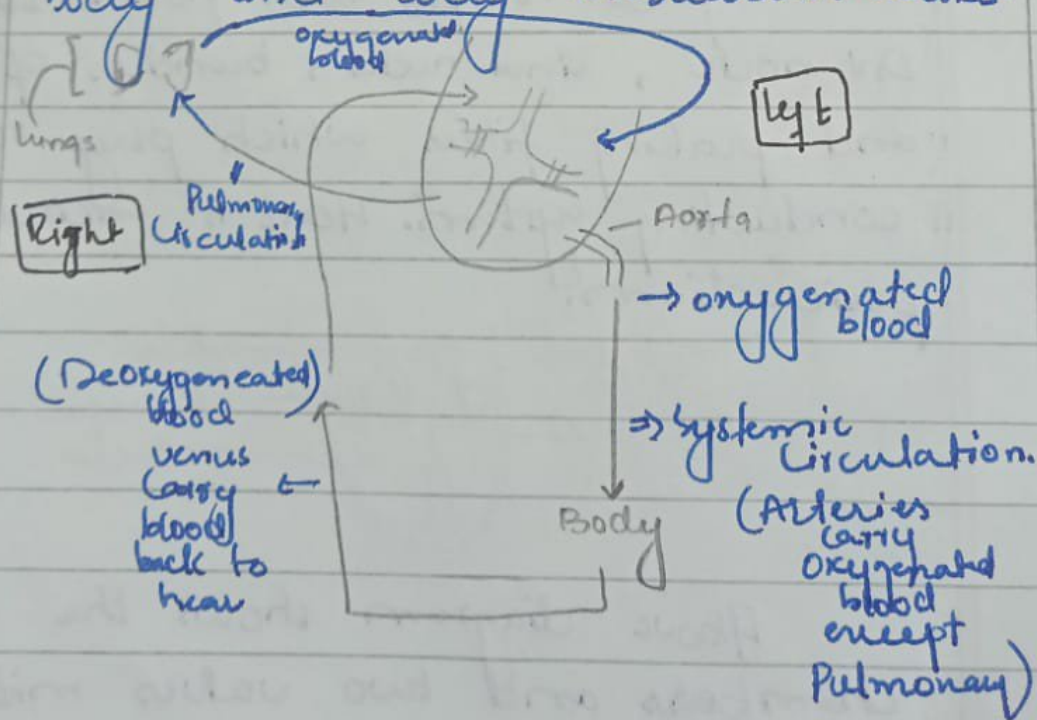
Heart is hollow muscular organ. Human heart has four chambers. These are right atria and ventricle, left atria and left ventricle. Four valves are present. Mitral valve, tricuspid valve, Pulmonary and aortic valve. These valves prevent the back flow. It has AV node, sinus nodes, bundles of his and purkinj fibers which plays role in conducting system. Heart is encircled by pericardium.



Above diagram shows the four chambers and two valves mitral and tricuspid.

Function of human heart and Cardiac cycle

Heart is a pumping organ. It pumps the blood towards the whole body and that is called systemic circulation. From whole body blood comes to right atria and then 70% passively and 30% actively blood moves from atria to ventricles then ventricle to lungs that is called pulmonary circulation. Through pulmonary circulation blood moves to right left atria and then left ventricle. Through aortic valve to aorta (systemic circulation). Through blood, all nutrients reach to body and body metabolism works.



Heart pumps blood from

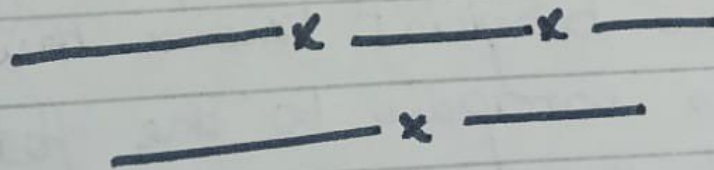
Left ventricle to whole body and that is oxygenated blood. From body to heart return deoxygenated blood. That is shown in above diagram.

Process by which heart regulate Blood Pressure

Blood pressure is a product of systemic vascular resistance and cardiac output.

$$BP = SVR \times CO$$

Heart regulate by increasing or decreasing Cardiac output. As Cardiac output is amount of blood that is transferred from ~~cor~~ left ventricle to aorta.



Answer # 3(b)

Biofuels

Biofuels are the sources to generate energy.

Production of biofuels

They are produced with the help of biomass. It includes plants and animal sources.

Advantages of Biofuel used as an alternative energy sources

Biofuels are used as an alternative source of energy. They are beneficial because they are cheap as compared to the fossil fuels.

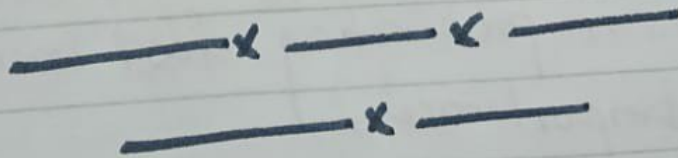
Another advantage is they are less likely to pollute environment.

Disadvantages of ^{using} Biofuels as an alternative source of energy

Using Biofuels as an alternative source of energy is cheap but it has decreased efficiency of vehicle and increasingly damaging farm machines. Another disadvantage is due to reliance on them, people started to cut the forests which ultimately damage the environment.

Usage of biofuels can reduce greenhouse gas emissions.

Combustion of fossil fuels can lead to increase emission of greenhouse gases. So replacing fossil fuels with biofuels can reduce greenhouse gas emission as biofuel less likely emit greenhouse gases (CO_2 , CH_4 , FCs , SO_2)



Q. ANSWER 3 (c)

Factors which determine food
Quality

Factors that determine food quality includes an appropriate temperature ingredients of food, preserving material ~~and~~, transport of food and conditions in which food is prepared. Food should be made in hygienic conditions and from healthy organic ingredients. It should be transport on appropriate temperature and storage on appropriate temperatures. Following this measures will give good quality food.

Importance of food safety and the role of food quality control measures in preventing food borne illness.

Importance

Food safety is important as it food is the basic need of human. If food safety is not maintained, there are ^{more} chances, that

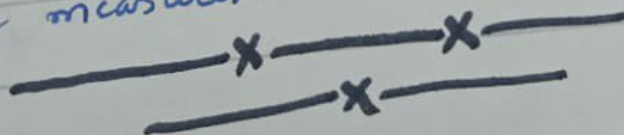
people get. So it will compromise life of people which will lead to more hospital admissions and more sick leaves. Ultimately, there is a loss of economy. This is the reason food safety is important.

Role

Food quality control measures plays a important role in preventing food borne illness. When control measures are applied, it is less likely the people will get unhealthy food through which, it is less likely that people get ill through food borne illness.

Ensurance by consumers that they are consuming safe and healthy food.

The only way consumer can ensure that they are consuming safe and healthy food is that food borne illness are not spreading. Another thing is that they can ensure that ~~safe and~~ they are consuming safe and healthy food by proper following food safety measures.



Q7 ANSWER 4(c)

Types of Vitamins

Vitamins are broadly classified in fat soluble vitamins and water soluble vitamins.

Fat soluble vitamin include:

Vitamin A

Vitamin D

Vitamin E

Vitamin K

Water soluble vitamin include:

Vitamin B Complex ($B_1, B_2, B_3, B_4,$

$B_5, B_6, B_7,$

$B_8, B_9, B_{10}, B_{11},$
 B_{12})

Vitamin C (Ascorbic acid)

Contribution of vitamins to human health.

Vitamins are the essential part of human diet. One can not remain healthy without vitamins.

Vitamin A is good for eye sight, Vitamin C for immunity, Vitamin D

is essential for bone, vitamin K for plate blood clotting. However, excess of these vitamins also contribute to diseases in humans.

Importance of vitamin in maintaining healthy skin, hair and eyes.

Vitamins are important in maintaining healthy skin, hair and eyes. Vitamin C halt the aging process and gives a person good skin. Vitamin A is necessary for good eye site. Both Vitamin A and C as well B complex contribute to healthy hair. Without them these become unhealthy.

Consequences of vitamin deficiencies
The consequences of vitamin deficiency cause diseases.

Vitamin A deficiency will lead to night blindness, Vitamin B₁ will lead to beriberi, B₉ will lead to anemia as well B₁₂ also. Like wise deficiency of Vitamin C causes immunodeficiency and chelosis, deficiency of vitamin K will lead to deficiency in clotting the blood, deficiency of Vit D lead to osteoporosis in adults and rickets in children.

_____X—X—

ANSWER # 4(D)

Poliomyelitis

Poliomyelitis is a disease caused by polio virus. It is ended in whole globe except Pakistan and Afghanistan. It has four variants. Among which fourth variant cause paralysis while other has symptoms of flu.

Transmission of polio

It is transmitted through oral-fecal route. Due to unsanitary conditions of washrooms and lack of following sanitary measures will lead to its transmission from infected to healthy individuals.

Global efforts in eradicating polio

World health organization (WHO) has played great efforts in eradicating polio by providing vaccines.

~~Vaccines~~ Vaccines for polio can be given through oral and intravenous route its dosage include

OPV I at birth, then OPV II at 6 weeks, OPV III and IPV I at 10 weeks and IPV II at 14 weeks.

Oral vaccines are live attenuated while the Intravenous are the killed one.

Above schedule provided by the WHO to eradicate polio.

Challenges in eradicating polio

Polio vaccines require proper appropriate temperature for their storage and transfer. otherwise their efficiency is not maintained. Third world countries are at challenge in transferring and storage vaccines so they are unable to eradicate polio (Pakistan and Afghanistan)

Another challenge in eradicating polio is resistance by the people due to lack of education.

Importance of vaccination in preventing polio Due to the vaccination, Polio has been eradicated through the whole world except Pakistan and Afghanistan. It decreases the mortality and morbidity.