Date: Aisha- 41 Day: M T W T F S

Part II

Section A

General Instructions

Question no2

1. Give numbering to headings.
2. Do not write lengthy paragraphs. Write medium sized paragraphs with headings.
3. Do not use table for comparison and contrast questions.
4. Draw figures/diagram/flowchart where needed.
5. Start new question from fresh page.
6. Write unit of the answer in ability section.
7. Explain mathematical steps and the reasoning for better score.
8. Change colour scheme for references to give them more visibility.
9. Manage time well.
10. Wide page borders are discouraged. Should be reasonable.
11. Avoid writing wrong references.
12. Give more weightage to expressedly asked parts of the question.

19

Ans:- Circulatory system: The circulatory system is made of heart, vessels and muscles that helps to control the flow of blood around body. This process is called circulation. The main parts of the system are the heart and blood vessels.

Role of human heart in circulation:

Human heart is muscular organ that circulates blood through the body. Everyday, the heart pumps about 2,000 gallons of blood, beats for 100,000 times. Th.

Structure of human heart:

The human heart has four chambers. The right and left artria are receiving chambers for blood. The artria are also called auricles. The heart's lower two chambers are pumping chambers right and left ventricles. The ventricles are connected into arteries. A septum separates the left and

Date: _____ Day: M T W T F S

right side of heart.

Poor presentation. Diagram?

Working of human heart in blood circulation

Blood returning from a trip around the body has given up most of its oxygen and picked up carbondioxide from body's tissues. The oxygenpoor blood feeds into two large veins the superior vena ceva and inferior vena ceva, which empty into right atrium of heart. The right atrium conducts blood to the ~~left~~ right ventricle and right ventricle conducts into the pulmonary artery. The pulmonary artery carries the blood to the lungs where it picks up the fresh supply oxygen and eleminates CO_2. Now oxygen rich blood returns to the heart by pulmonary veins, which empty into the left atrium. Blood passes from left atrium into left ventricle, from where it is pumped out of heart into aorta, ~~to~~ Smaller arteries that branch

Date: _____ Day: M T W T F S

to the whole body.

Q/ d)

Ans:- Liver

Humans have five vital organs that are essential for survival. These are brain, heart, kidneys, liver and lungs.

The liver is an abdominal glandular organ in the digestive system. It is located in the right upper quadrant of abdomen, under diaphram.

Function of liver

The liver has complex role in function of body. Detoxification, metabolism, harmone regulation, digestion, and decomposition of red blood cells.

It produces bile, a chemical substance that breaks down fats and make them more easily digestible.

The liver also synthesizes important elements of plasma, and stores some vital nutrients including vitamins (A, D, E, K and B

Date. _____ Day. M T W T F S

Subheadings missing.

It also stores simple glucose and converts it to usable glucose if blood sugar level falls in body. One of best role of liver is a detoxification system it removes toxic substances from blood such as alcohal, and drugs. It breaks heamoglobin, insuline and excessive harmones to keep harmone level in balance.

Question no 3

a)

Ans. **Kidney**

The Kidney are dark red, slightly flattened, bean shaped organs about 10cm long, 5cm wide and 4cm thick and each weighing about 270g. They are placed against the back wall of abdominal cavity just below diaphragm.

Nephron Function

The main function of nephron are related to filtering, reabsorbing

Date: _____ Day: M T W T F S

secreting glutamate carbohydrates and solutes. The glomerulus has two cell layers as well as basement membrane that separates it from Bowman's capsule. This basement membrane contains collagen and glycoprotein fibres. These fibres have a mesh like structures that uses ultrafiltration to filter the blood. Although smaller molecules in blood are able to pass through this membrane larger molecules such as blood cells and proteins cannot. This process removes the substances including amino acids and glucose but selective reabsorption allows the body to reabsorb them and keep the electrolyte levels balanced.

After the fluid is filtered, it goes into proximal tubule where it is reabsorbed into the peritubular capillaries. This is the point at which any essential substances get

Date: _____ Day: M T W T F S

No lengthy paragraphs. Diagram missing.

transported back into blood. The numerous microvilli increase the surface area, making absorption more effective. While, the substances are re-added the solute concentration found of the blood in these capillaries increases. This means that great deal of water must go back into blood while in proximal tubule using osmosis as this will balance electrolyte levels. The loop of Henle concentrates the salts. The limbs of Loop of Henle are able to reabsorb the certain solutes, water, and ions. These substances are reabsorbed from area in collecting ducts. The ascending limb is permeable to salts than water so during absorption of salts, more water exists the descending limb which in turn creates concentrated urine.

Date: _____ Day: M T W T F S

d)

Ans. Food preservation methods

1) Drying: Micro-organisms in healthy growing state may contain in excess of 80% water. If the water is removed from the bacterial cell then multiplication will stop.

2) Cold → Most bacteria, yeasts and molds grow best in temperature range 16-30°C. At temperature below 10°C however growth will slow but when water is not completely frozen in all foods. This is due to dissolved sugars, salts and other constituents.

Other methods?

3) Heat: Most bacteria, yeast, molds grow best in Temperature range of about 16 to 38°C. Most bacteria are killed in the range 82-93°C but many bacteria spores are not destroyed even by boiling water at 100°C. So Temperature of 121°C must be maintained for 15 min.

Date: _____ Day: M T W T F S

Question no 3

a)

Ans. **Artificial Intelligence** What is AI?

Artificial intelligence has impacted numerous aspects of world.

1) **Automation**: Artificial intelligence has revolutionized automation in industries such as manufacturing, logistics, and transportation. More detail?

2) **Healthcare**: It has transformed the healthcare sector by improving diagnoses drug discovery, and medicine.

3) **Finance**: It has revolutionized finance industry by enabling faster and more accurate data analysis. fraud detection and algorithmic trading.

4) **Transportation**: It has impacted transportation particularly with the development of self-driving cars. ,sensors to percieve environment, make decisions and navigate autonomously, protecting road safety.

Date. _____ Day. M T W T F S

b).

Ans: Water scarcity is pressing global issue, and addressing it requires a combination of short term and long term measure. Here are few measures to deal with water scarcity.

1) **Water conservation** Encourage water conservation practices at both individual and community levels promote awarness campaigns.

2) **Improved irrigation techniques:** Enhance agricultural prachces for treating and reusing waste waters for nopotable purposes such as irrigation and ustrial processes, and toilet flushing.

4) **Rainwater harvesting** Encourage the adoption of rainwater harvesting systems at individual, community and institutional levels.

5) **pesalination technique** : Desalination can provide a reliable source

Question no 4

s: **Avalanche** An avalanche is rapid flow of snow, ice and debris down a mountainside or slope. It is natural disaster that poses threat to human life, infrastructure and environment.

Excess

Examples

Mount Everest Avalanch (2014):

In April 2014, an avalanche struck the Khumbu Icefall on Mount Everest resulting in deadliest incident in mountain's history. Sixteen Nepalese guides lost their lives in this incident.

Tunnel Creek Avalanche (2012):

In Feb 2012, an avalanche occured in Stevens pass ski area in USA. The avalanche buried and killed three skiers in the tunnel creek back country area.

Date: _____ Day: M T W T F S

Section B

4-3

Question no 6

(i)

Solution. age of father five years ago = (F-5)

Thrice the age of son = 3(S-5)

Age of son = 30 years

(F-5) = 3(30-5)

F-5 = 3(25)

F-5 = 75

F = 75+5

F = 80 Ans

So, Father age is 80 years old.

d)

Ans.

8, 4, 32, 7, 5 ____

17, 19, 23, ____ 29

Reason?

Question 7

c)

Ans. IQ and EQ : IQ refers to the person's intellectual or cognitive abilities as measured by

Date: _____ Day: M T W T F S

EQ, on the other hand refers to emotional intelligence or emotional quotient. It represents person's abuity to perceive, understand, manage and express emotions effectively. It involves skills such as self awarness, relationship managment.