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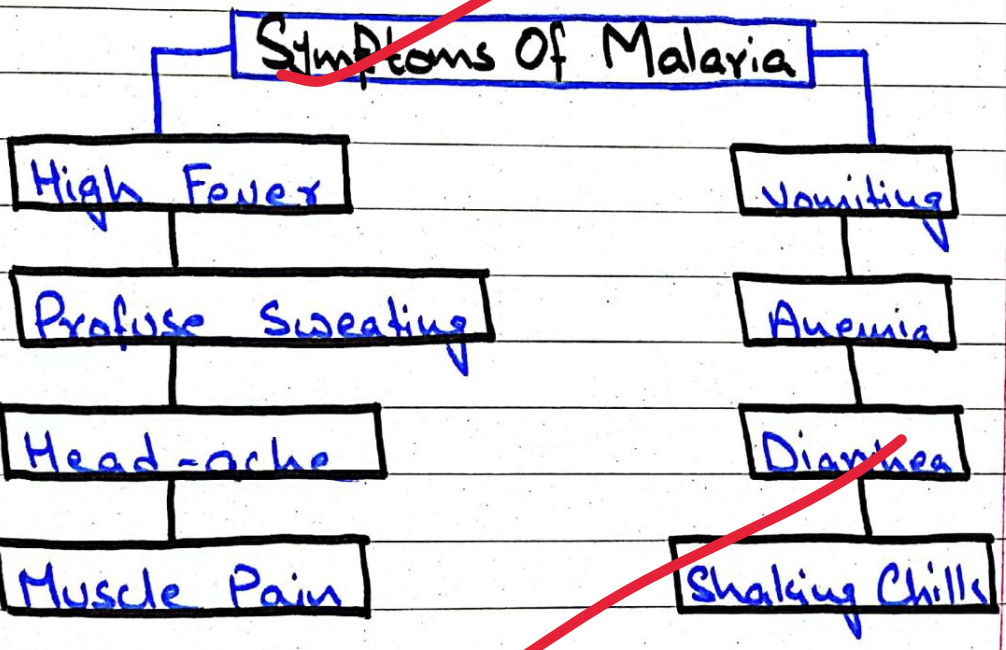
Assignment

Mention the full qs statement for proper evaluation. Without that these are just notes and cannot be awarded marks

Malaria:

Malaria is a life-threatning disease that is typically transmitted through the bite of an infected female Anopheles mosquito infected with plasmodium Parasite.

Symptoms:



Causes:

Malaria is transmitted by blood, so it can also be transmitted through

- From infected mother to new born baby.
- Through blood transfusions with

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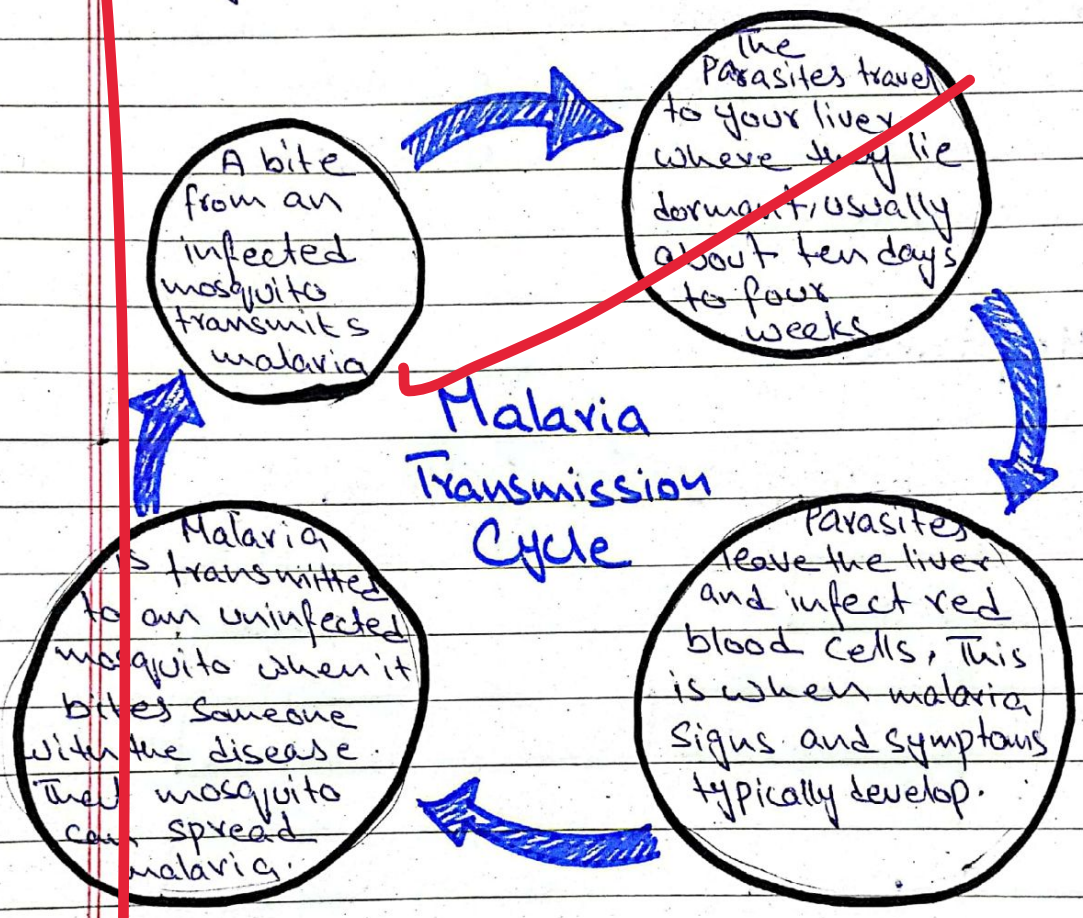
infected blood.

- An organ transplant
- Bite of infected female Anopheles mosquito
- By sharing needles used to inject drugs.



Keep the charts legible

Treatment:

(i) Antimalarial drugs like Chloroquine.
(ii) Treatment of fever, headaches.
(iii) Fluid replacement in case of dehydration.

Preventions:

- If you plan on living temporarily in or traveling to an area where malaria is common, talk to your doctor about taking medications to prevent malaria.
- Medications can greatly reduce the chances of getting malaria.
- Apply mosquito repellent.
- Drape mosquito netting over beds.
- Treat clothing, mosquito nets, tents, sleeping bags and other fabrics with an insect repellent called Permethrin.
- Wear long pants and long sleeves to cover your skin.

Dengue

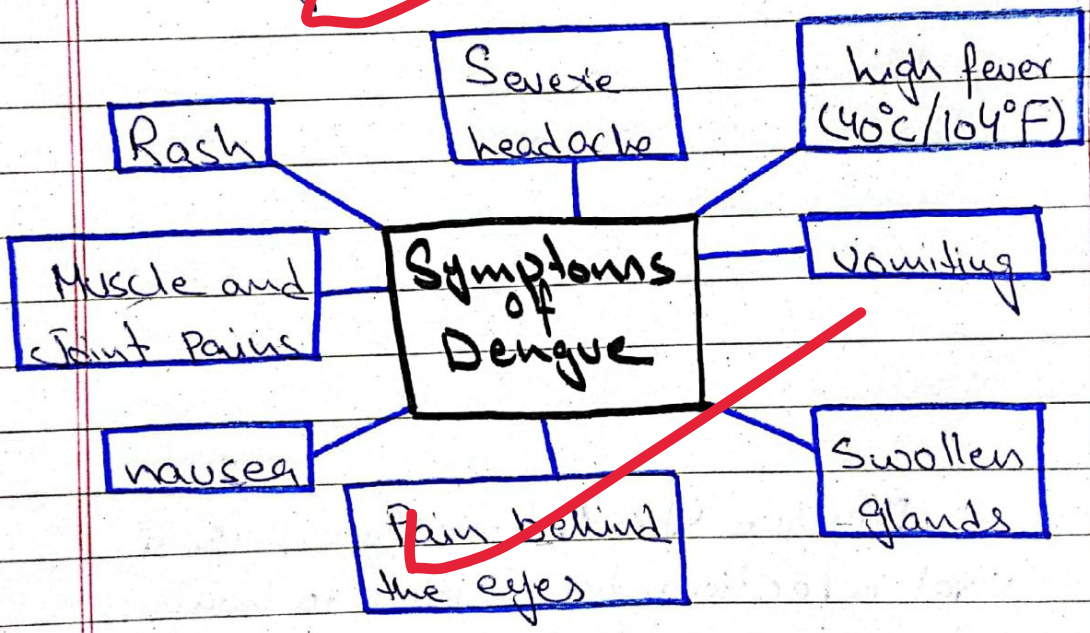
Dengue (break-bone fever) is a viral infection, transmitted to humans through the bite of infected mosquitoes. The mosquito Aedes Aegypti is responsible for transmitting dengue viruses among people.

Dengue is found in tropical and sub-tropical climates worldwide, mostly in urban and semi-urban

areas. About half of the world's population is now at risk of dengue with an estimated 100-400 million infections occuring each year.

Symptoms:

If symptoms occur, they usually begin 4-10 days after infection and last for 2-7 days. Signs and symptoms of dengue fever most commonly include:



Causative Agents Of Dengue:

Dengue is caused by virus of the Flaviviridae family which includes

- Yellow fever virus
- West Nile virus
- tick-borne encephalitis virus

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Preventions:

- The mosquitoes that spread **dengue** are **active** during the **day**. Lower the risk of getting dengue by protecting yourself from mosquito bites by using;
- **Mosquito nets** if sleeping during the day ideally nets sprayed with **insect repellent**.
- **Coils** and **vaporizers**.
- Clothes that **cover** as much of your **body** as possible.
- **Window screens**.
- **Mosquito repellents**; and
- **Reduce mosquito habitats** as the mosquitoes that carry the dengue virus typically live in and around houses, breeding in standing water that can collect in such things as used automobile tyres.

Treatment:

If you get dengue, it is important to;

- take rest.
- drink plenty of water/liquids
- Use paracetamol for pain.

If you have severe dengue fever

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you may need:

- Supportive care in a hospital.
- Replacement of body fluids.
- Transfusion to replace blood loss.
- Pain killers.
- Monitoring of platelet count.

WHO Response To Dengue:

- WHO responds to dengue in the following ways;
- Provides **technical support** and **guidance** to countries for the effective management of dengue outbreaks.
- Formulates **evidence-based strategies** and **policies**.
- Support countries in the **development** of **dengue prevention** and **control strategies** and adopting the Global Vector Control Response (2017-2030) and the Global Arbovirus Initiative (2022-2025).
- Reviews and recommends the development of new tools (insecticide products and application technologies).
- Gathers official records of dengue and severe dengue from over 100 Member States
- Publishes guidlines and handbooks for

Surveillance, Case management, diagnosis, dengue preventions and Control for Member States.

Hepatitis:

Hepatitis means injury to the liver with inflammation of the liver cells.

The liver is a vital organ that processes nutrients, filters the blood, and fights infections. When the liver is inflammed and damaged, its function can be affected.

Types Of Hepatitis:

There are five main types of viral hepatitis e.g. A, B, C, D and E depending on the type of virus.

Causes:

Hepatitis can be caused by:

- Immune cells in the body attacking the liver.

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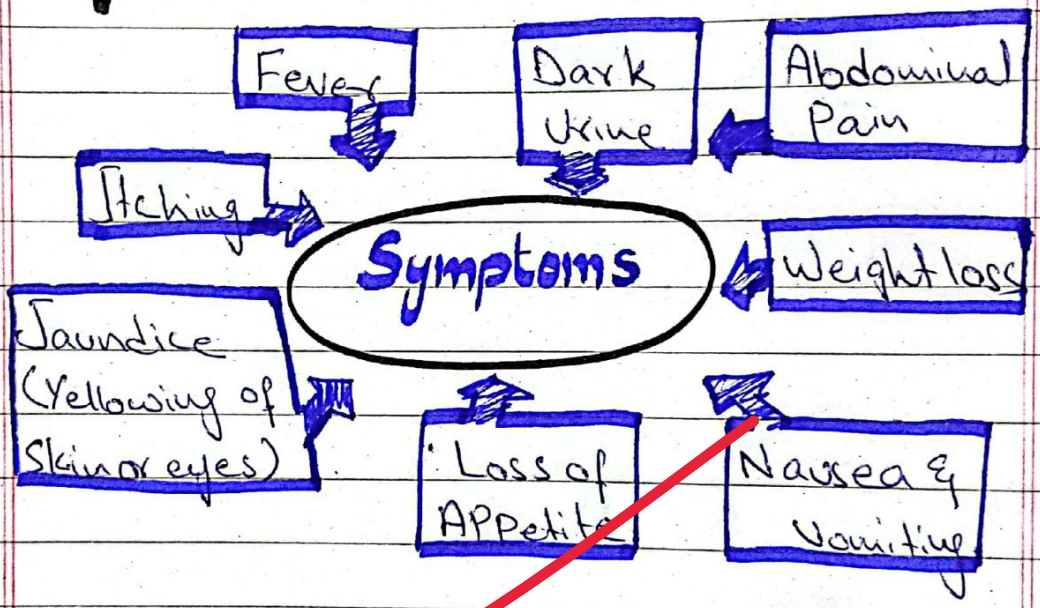
- Infections from viruses (such as hepatitis A, hepatitis B, or hepatitis C), bacteria or parasites.
- Liver damage from alcohol or poison.
- Medicines, such as an overdose of acetaminophen.
- Fatty liver.

Symptoms:



Q Discuss the preventive measures that can be taken to control the spread of hepatitis viruses.

Preventions:

Here are some preventive measures to control the spread of hepatitis viruses.

i **Vaccination:** Vaccine are

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available for hepatitis A and B. Getting vaccinated can prevent these infections.

ii **Practice good hygiene:** Wash your hands regularly with soap and water, especially after using the bathroom and before handling food.

iii **Safe food and water:** Ensure that food is cooked thoroughly, and drink safe, clean water. Avoid eating raw or undercooked shellfish and practice good food hygiene.

iv **Avoid Sharing:** If you use drugs, don't share needles or other injecting equipment. Avoid sharing razors and using someone else's toothbrush.

v **Practice Safe Piercing:** Ensure that needles and equipment use for piercing and tattoos are sterile to prevent hepatitis B and C transmission.

vi **Cautions with blood Products:**

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Ensure that blood transfusions and organ transplants are done using screened and tested blood and organs to prevent hepatitis transmission. Don't touch spilled blood!

vii **Practice Safe Sex:** Adopt safety measures during sexual activity to reduce risk of hepatitis B and C transmission. And avoid sexual contact with the infected person.

By following these preventive measures, you can help control the spread of hepatitis viruses and reduce the risk of infection.

① Describe the different types of viral hepatitis and their modes of transmission.

Tyes	Routes of Transmission	Severity & Prolonged infection	Virus And Vaccine Available	Risk of Liver Cancer
A	Feces	Mild. No chronic State	Hepatits A Virus (HAV). Vaccine Available	No
B	Blood/body fluids	Severe. Has chronic State	Hepatitis B Virus (HBV). Vaccine Available	Yes
C	Blood/body fluids	Moderately Severe. Has Chronic State	Hepatitis C Virus (HCV). Vaccine Available	Yes

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D	Blood / body fluids	Severe. Has Chronic State	Hepatitis D Virus (HDV). Vaccine Available	Yes
E	Feces	Mild. No Chronic State	Hepatitis E Virus (HEV). No vaccine Available	No.

Treatment:

- General symptomatic treatment (relief of fever, vomiting and fatigue).
- Specific treatments with drugs like antivirals (interferons).

Polio

Q What is polio and what causes it?

Polio

Polio, short for poliomyelitis is a disease caused by poliovirus.

This virus mainly affects the nervous system, leading to paralysis in severe cases. It can also lead to trouble

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breathing and sometimes death.

Causes:

- Polio is caused by the **poliovirus**.
- There are three types Sterotypes of the poliovirus; **type 1**, **type 2** and **type 3**.
- The virus is **highly contagious** and primarily spreads through the **fecal-oral route**, meaning it is transmitted through contact with infected feces.
- It can also be spread through **contaminated food**, **water**, or **surfaces**.
- In rare cases, Poliovirus can be transmitted through respiratory droplets from an infected person, particularly in crowded or unsanitary conditions.

Transmission Process: The virus can enter the body through the mouth and then replicate in the intestines. From intestines, the virus can enter the bloodstream and travel to the nervous system, where it can cause paralysis.

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Q Describe the symptoms of polio infection.

Symptoms:

Most people infected with the poliovirus (about 90-95%) have no symptoms and may not even realize they are infected.
For those who do develop symptoms, they can range from mild to severe and may include:

- Fever
- Sore throat
- Headache
- Fatigue
- Nausea
- Stiffness in the neck and back
- Muscle weakness or paralysis, usually affecting the legs but can also involve the arms and other muscles.
- In severe cases, paralysis can lead to permanent disability or even death.

➡ There is no cure for polio, it can only be prevented by immunization.

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Q Discuss the role of vaccination in preventing polio.

Role of Vaccination:

Vaccination plays a crucial role in **preventing polio** by providing immunity against the poliovirus.

- Polio vaccines stimulate the body's immune system to **produce antibodies** against the poliovirus.
- These antibodies **protect vaccinated individuals** from becoming infected with the virus if they are exposed to it.
- Vaccination not only prevents individuals from getting sick but also helps **stop the spread** of the virus within communities.
- Through wide spread vaccination campaigns including routine immunization and supplementary immunization activities, the **goal is to acheive herd immunity**, where a sufficient proportion of the population is immune to prevent outbreaks.
- The success of vaccination efforts has **led to significant reductions** in polio cases worldwide, bringing the world closer to the goal of polio eradication.

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Q: What are the types of vaccine?

Types of Vaccine:

There are two types of vaccines:

1. Injectable Polio Vaccine / IPV (also called "Salk") injection in arm or leg.
2. Oral Polio Vaccine / OPV (also called "Sabin") through mouth.

Q What are the challenges being faced by Pakistan in complete eradication of Polio?

Pakistan has made significant progress in reducing polio cases over the years, but challenges remain. In recent years, Pakistan has seen a decrease in the number of polio case, but rare outbreaks continue to occur.

Challenges:

1. **Vaccine hesitancy:** Some communities in Pakistan have been resistant to polio vaccination due to misconceptions, rumors, and distrust of vaccination campaigns.
2. **Inaccessibility:** Remote and conflict-affected areas, particularly

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in the tribal regions and Balochistan province, pose challenges in reaching children with polio vaccines.

3 **Security Concerns:** Polio vaccination teams have faced security threats and attacks in certain areas, leading to disruption in vaccination campaigns.

4 **Weak health Infrastructure:** Limited access to healthcare services, inadequate sanitation, and poor hygiene contribute to the persistance of polio transmission in some areas.

5 **Cross-border transmission:** Poliovirus can easily cross-borders, transmission between Pakistan and neighboring Afghanistan remains a concern.

Despite these challenges, Pakistan continues to implement vaccination campaigns and strengthen surveillance systems to eradicate polio. International partners, including the World Health Organization (WHO), UNICEF, and the Global Polio Eradication Initiative (GPEI), collaborate with the Pakistani government to address these challenges and work towards polio eradication.

Typhoid

Q What is typhoid fever, and what causes it?

Typhoid fever:

"Typhoid fever is a life-threatening infection caused by the bacterium Salmonella Typhi." (WHO).

It is a bacterial infection that can spread throughout the body, affecting many organs.

Causes:

- Typhoid fever is caused by the **bacterium Salmonella Typhi**.
- This bacterium is primarily transmitted through **contaminated food** and **water**.
- S. Typhi bacteria are shed in the **feces** and **urine** of infected individuals.
- The infection spreads when contaminated food or water **ingested**, or through **direct contact** with an infected person's feces or urine.
- **Poor sanitation** and **hygiene practices** contribute to the transmission of

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typhoid fever.

- Inadequate sewage disposal systems and contaminated water sources increase the risk of infection in communities.
- Individuals who travel to areas with poor sanitation or consume food and water from unsafe sources are at higher risk of getting typhoid fever.

Q Describe the signs and symptoms of typhoid fever.

Symptoms:

Here are the signs and symptoms of typhoid fever:

- ➡ Sustained high fever, often reaching 103-104°F.
- ➡ Headache and body aches.
- ➡ Weakness and fatigue.
- ➡ Abdominal pain or discomfort.
- ➡ Loss of appetite
- ➡ Constipation or diarrhea, which may be bloody.
- ➡ Nausea and vomiting.
- ➡ A rash of flat, rose colored spots may appear on the trunk of the body in some cases.

These symptoms typically develop gradually over several days to weeks and can vary in severity.

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Q Describe the preventive measures that can be taken to control the spread of typhoid fever.

Preventive Measures:

Here are some preventive measures that can be taken to control the spread of typhoid fever.

- Ensure access to clean and safe drinking water.
- Practice good personal hygiene, including handwashing with soap and water.
- Properly sanitize and cook food, especially meats and seafood.
- Avoid consuming raw or undercooked foods.
- Maintain proper sanitation and sewage disposal systems.
- Vaccination against typhoid fever is available and recommended for travelers to high-risk areas.
- Prompt treatment of infected individuals to prevent further spread of disease.

These measures help to reduce the risk of typhoid fever transmission and are essential for preventing outbreaks.

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Q Discuss the treatment options available for typhoid fever.

Treatment Options:

Antibiotics: Treatment for typhoid fever usually involves antibiotics to kill Salmonella bacteria causing the infection.

Supportive Care: In addition to antibiotics, supportive care such as rest, hydration and fever reducing medications may be recommended.

Hospitalization: Severe cases of typhoid fever, particularly those with complications such as intestinal perforation or severe dehydration, may require hospitalization for close monitoring.

- Early diagnosis and treatment are crucial for successful recovery and to prevent complications.

Q Explain the role of vaccination in preventing typhoid fever.

There are **two** main **types** of typhoid vaccines;

(i) the injectable Vi polysaccharide vaccine
(ii) the oral live attenuated Ty21a vaccine.

Role Of Vaccination:

➡ Typhoid vaccines **stimulate** the **immune system** to produce antibodies against Salmonella bacteria that cause typhoid fever.

➡ Vaccination helps **prevent infection** and **reduces** the **risk** of transmission within communities.

➡ Vaccination is recommended for **travelers** to areas where **typhoid** fever is **common** and for individuals at **high risk** of **exposure**, such as healthcare workers and laboratory personnel.

➡ While vaccination provides **protection** against typhoid fever, it's essential to continue practicing good hygiene and sanitation measures, especially in areas with poor sanitation infrastructure.