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Question: **1** :-

Answer: **Diagnosis:**

It is Aspergillosis because patient have these sign and symptoms which towards this disease. In X-rays result fungus ball is show (Aspergillomos) which is in the lungs and having an allergic attach just like Asthma means shortening of breathing and blood masses accumulated in the lungs. And patient has also week-immune system because he is 45years old man i-e High IgE titer against Aspergillus antigens.

**Causative Agent:**

Thecausative agentis **Aspergillus** that cause pulmonary aspergillosis.

Question: **2 :- (a)**

Answer: **Definitive Host:-**

These organisms where the parasites inter to lives in that organism and mature to capable for the reproduction

For Example:-

The most common example in human is tapeworm used human as definitive host.

**(b)**

Answer: **Intermediate Host:-**

That organism in which the parasite lives during developmental period only, not mature or sexual reproduction is known as intermediate host

For Example:-

Some tapeworms make use of fishes, Cows and Pigs as an intermediate host. If these animals ingests a tapeworm eggs, egg hatches and the larva that moves from intestine to the muscle of animals in which it forms a cyst. When human used these fishes or meat of cows as a meal to cooked it contain cyst, when larva moves out to the cyst, it grows into its mature or reproductive form and begin to reproduce inside the definitive human host.

**(C)**

Answer: **Vector:-**

Vector is living carriers that carry infectious disease to transfer the agent from infected individual (Most usually an Arthropod).

For Example:

A typical example is the female anopheles mosquito that transmits malaria. It has two phases occurs in the life cycle, primarily in mosquitoes in which sporozoites are produced and the second life cycle is Asexual that occurs in humans in which schizonts are made.

Question: **3**

Answer: **Transmission and life cycle of Plasmodium:-**

**Transmission:**

Transmission of plasmodium is transmitted primarily by Mosquito bites but transmission across the placenta, in blood transfusions and also occurs during intravenous drug abuse.

**Life cycle of plasmodium:-**

The life cycle of plasmodium take place in two hosts

1. Mosquito which is acting as the definitive host for the plasmodium life cycle

2. In the human the sexual stages of plasmodium take place which is an intermediated host for the plasmodium

**Stages:**

🡪The life cycle of plasmodium start injecting the sporozoites of plasmodium in to the individual circulation

🡪The sporozoite through circulation reaches the liver and infects the liver cell

🡪These sporozoites inside the liver cellsproduces a large number of merozoites which are called as hepatic schizont

🡪These schizont ruptured the liver cell and enter the circulation where they attack on the red blood cell

🡪After infecting the red blood cell the merozoites passes through the following stages

=Early trophozoite

=Late trophozoite

=Blood stage schizont

=these blood schizont can result in the hemolysis of red blood cell and release in the form of merozoites and these merozoites can now attack another red blood cell to repeat the cycle mention above

🡪Some of the merozoites produce gametocytes inside the red blood cell. These red blood cell when taken by another mosquito start the sexual stages of the plasmodium in the mosquito

🡪These gametocytes mate than under goes meiosis

🡪Then migrates through mid-gut wall and form oocyst

🡪These oocyst convert into sporozoites and reaches the saliva of mosquito

🡪Now their mosquito has sporozoites in its saliva and can inject these vsporozoites through bite to another individual an d cycle will repeat in same manner

**Diagram:**

Cycle in mosquito cycle in human

Sporozoites(To salivary gland) Hepatic cell(Hyponozoite)

Bursting cyst Merozoites mature liver Schizont

Oocyst Erythrocyte

Mosquito Mid gut ookinete Tropozoite

Zygote erythrocytic schizont

Macrogamete Rupture erythrocyte

Microgamete Erythrocyte

Gametocyte

**-: THE END:-**