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**Paper: Micology and Parasitology**

**Ans No.1**

**Diagnosis:**

- Sputum culture, Biopsy, X-ray.

The pulmonary aspergilloma is a mass (ball) caused by fungal infection. It usually grows in lung cavities. It should be kept in mind that it can appear in brain, kidney, or other organs.

**Causes:**

The aspergillosis is an infection which is caused by the fungus known as aspergillus.

**Aspergilloma:**

The aspergillomas are formed when the fungus grows and makes a clump in lung cavity.

This cavity may be often created by previous conditions.

**Important Note:**

It must be kept in mind that aspergillus is a common fungus which mostly grows on stored grain, dead leaves, piles, and birds' droppings.

**Symptoms:**

Mostly symptoms are given below.

- Coughing with blood
- Fever
- Headache
- Sometimes sinusitis
- Superior costal retraction
- Sub costal
- Inter costal
- Lower intercostal
- Fatigue
- Weight loss

## **Ans No.2**

### **Parasites:**

Any organisms which lives on other organisms for survival of its life.

### **Host:**

The species upon which parasites lives is called host.

### **Types of Parasites:**

#### **1. Endoparasite:**

Parasites which lives inside in the body of living organisms.

#### **2. Ectoparasite:**

Parasites which lives outside from the body of host.

### **Definitive Host:**

It is also called primary host. In this stage the parasite reach into the maturity and most of the cases reproduce sexually.

### **Secondary Host:**

It is the of parasite for a short interval of its developmental stages of its life cycle. The intermediate parasites may be also attack on the host and symptom of the disease may arise.

### **Vectors:**

Any living entity which transmitted parasites to the host is called vector.

For Example:

Female anaphil mosquito act as a vector for the transmission of plasmodium. There are four types of vector.

- **Plasmid Vector:**

It is a vector for bacterial host.

- **Viral Vector:**

These vectors carry up viral diseases.

- **Cosmid Vector:**

This vector may carry both viral and bacterial species.

- **Chromosomal Vector:**

This vector is man made vectors which is used for transmission of various types of traits.

A vector must have the following important characteristic.

- Origin of Replication
- Selectable Marker
- Polylinker sites

Smaller the size of the vector higher will be the efficiency of the transmission of the trait.

For Example:

When we use smaller vector than its delivery become easy and vice versa.

### **Ans No.3**

#### **Plasmodium:**

It is a parasite which cause Malaria.

There are four types of Plasmodia.

- **Plasmodium Vivax**
- **Plasmodium Ovale**
- **Plasmodium Malariae**
- **Plasmodium Falciparum**

#### **Life Cycle of Plasmodium:**

For life cycle of plasmodium two factors are necessary, one is host and second is vector.

There are two stages for life cycle of plasmodium.

- Sexual cycle
- Asexual cycle

#### **Life Cycle Process:**

The life cycle of plasmodium is beginning in the body of human with the entry of sporozide and the blood of human from the siliva of anaphil mosquitos.

The sporozides moves into liver where it differentiated into merozides.

- After this merozides moves into RBC. This cycle in RBC repeat regularly. When the merozides splited RBC, the patient feels symptoms of malaria which is chill fever and sweating. The merozides change into male and female gemetophyte. Those gemetophyte containing RBC or digested by female anaphil, which goes into gut of anaphil where the diployed zygote is change into Oocytes from which many haploid sporozides. This sporozides again moves into the siliva of mosquito and hence the cycle continuous.

#### **Transmission of Malaria:**

- Malaria is mainly transmitted by biting anaphil mosquito.
- Transmission across placenta by blood transfusion and by intraveinus drug abuse.