FAQs;

1:What is botulism?

Botulism is a rare but serious paralytic illness caused by a nerve toxin that is produced by the bacterium *Clostridium botulinum* and Foodborne botulism is caused by eating foods that contain the botulinum toxin. Wound botulism is caused by toxin produced from a wound infected with *Clostridium botulinum*. Infant botulism is caused by consuming the spores of the botulinum bacteria, which then grow in the intestines and release toxin. All forms of botulism can be fatal and are considered medical emergencies. Foodborne botulism is a public health emergency because many people can be poisoned by eating a contaminated food.

2: Explain the symptoms of botulism?

The classic symptoms of botulism include double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, and muscle weakness. Infants with botulism appear lethargic, feed poorly, are constipated, and have a weak cry and poor muscle tone. These are all symptoms of the muscle paralysis caused by the bacterial toxin. If untreated, these symptoms may progress to cause paralysis of the respiratory muscles, arms, legs, and trunk. In foodborne botulism, symptoms generally begin 18 to 36 hours after eating a contaminated food, but they can occur as early as 6 hours or as late as 10 days.

3: What is afflotoxin?

Aflatoxins :Aflatoxins are naturally occurring mycotoxins that are produced by Aspergillus flavus and Aspergillus parasiticus, fungi. The name, aflatoxin, was created around 1960 after the discovery that the source of "Turkey 'X' disease" was ***A**spergillus **fla**vus **toxins***. Aflatoxins are toxic and among the most carcinogenic substances known. After entering the body, aflatoxins may be metabolized by the liver to a reactive epoxide intermediate or hydroxylated to become the less harmful aflatoxin M_1

4:What are majour illness causing microorganisms.

According to Centers for Disease Control there are top 4 emerging pathogens

1. *E.coli 0157:H7*
2. *Salmonella enteriditis*
3. *Listeria monocytogenes*
4. *Campylobacter jejuni*

5:What are Faecal-oral diseases?

Faecal-oral diseases represent the largest health burden associated with a lack of improved sanitation, diarrhoea being the most burdensome of these and accounting for over 1.6million child deaths each year. The major *soil-transmitted helminths* showing association with poor access to improved sanitation are hookworm, roundworm and whipworm, all of which are transmitted when eggs are passed in human feces which is then left in the environment.

7: What are major groups mycotoxin?

Aflatoxins are largely associated with cotton, peanuts, spices and maize. Ochratoxin is a mycotoxin that comes in three secondary metabolite forms, A, B, and C. All are produced by *Penicillium* and *Aspergillus* species. The three forms differ in that Ochratoxin B (OTB) is a nonchlorinated form of Ochratoxin A (OTA) and that Ochratoxin C (OTC) is an ethyl ester form Ochratoxin A.

OTA has been labeled as a carcinogen and a nephrotoxin, and has been linked to tumors in the human urinary tract.

8: Explain what is Ergotism ?

Ergotism is the effect of long term ergot poisoning, traditionally due to the ingestion of the alkaloids produced by the Claviceps purpurea fungus that infects rye and other cereals, and more recently by the action of a number of ergoline-based drugs. Ergotism is the ergot poisoning, traditionally due to the ingestion of the alkaloids produced by the Claviceps purpurea fungus that infects rye and other cereals, and more recently by the action of a number of ergoline-based drugs. .There are two forms of ergotism: gangrenous, affecting blood supply to extremities, and convulsive, affecting the central nervous system.

9: *Salmonella*

Salmonella is a genus of rod-shaped bacteria of the Enterobacteriaceae family. There are two species of Salmonella, Salmonella bongori and Salmonella enterica.. *Salmonella* infection is a common bacterial disease that affects the intestinal tract.*Salmonella* bacteria typically live in animal and human intestines are shed through feces. Humans become infected most frequently through contaminated water or food. **Raw meat, poultry and seafood.** Feces may get onto raw meat and poultry during the butchering process. Seafood may be contaminated if harvested from contaminated water. Contamination also can occur in the kitchen, when juices from raw meat and poultry come into contact with uncooked foods, such as salads.

10: Write notes on *Aeromonas hydrophila* infection?

Aeromonas hydrophila is a ,Gram-negative, rod-shaped bacterium mainly found in areas with a warm climate. This bacterium can be found in fresh or brackish water. It can survive inaerobic and anaerobic environments.

A. hydrophila was isolated from humans and animals in the 1950s. It is the most well known of the species of *Aeromonas*. It is resistant to most common antibiotics and cold temperatures. It produces aerolysin cytotoxic enterotoxin that can cause tissue damage. *A. hydrophila* is widely considered a major fish and amphibian pathogen, and its pathogenicity in humans has been recognized for decades.

11:Explain what is infant botulism?

Infant botulism is a rare but serious gastrointestinal condition caused by exposure to Clostridium ***botulinum*** (C. ***botulinum***) spores. Bacteria from the spores can grow and multiply in a ***baby's*** intestines, producing a dangerous toxin. The condition can occur in***infants*** up to age 12 months. ***Infant botulism*** is a potentially life-threatening disease in which a bacteria called Clostridium botulinum grows inside a baby's gastrointestinal tract.

12: What is the Bacterial agent causing gas gangrene?

Clostridium perfringens is the most common bacterial agent for gas gangrene, which is necrosis, putrefaction of tissues, and gas production. The gases form bubbles in muscle (crepitus) and the characteristic smell in decomposing tissue. After rapid and destructive local spread (which can take only hours), systemic spread of bacteria and bacterial toxins may cause death. This is a

problem in major trauma and in military contexts. *C. perfringens* grows readily on blood agar plate in anaerobic conditions, and often produces a double zone of beta hemolysis.

13: **Fusarium** Toxin?

Fusarium toxins are produced by over 50 species of *Fusarium* and have a history of infecting the grain of developing cereals such as wheat and maize.

They include a range of mycotoxins, such as: the fumonisins, which affect the nervous systems of hourse and may cause cancer in rodents; the trichecenes, which are most strongly associated with chronic and fatal toxic effects in animals and humans.

14: What kind of germ is *Clostridium botulinum*?

Clostridium botulinum is the name of a group of bacteria. They can be found in soil. These rod-shaped organisms grow best in low oxygen conditions. The bacteria form spores which allow them to survive in a dormant state until exposed to conditions that can support their growth. There are seven types of botulism toxin designated by the letters A through G; only types A, B, E and F cause illness in humans

15: Explain in detail about the complications from botulism?

Botulism can result in death due to respiratory failure. However, in the past 50 years the proportion of patients with botulism who die has fallen from about 50% to 3-5%. A patient with severe botulism may require a breathing machine as well as intensive medical and nursing care for several months, and some patients die from infections or other problems related to remaining paralyzed for weeks or months. Patients who survive an episode of botulism poisoning may have fatigue and shortness of breath for years and long-term therapy may be needed to aid recovery