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**PAPER MEDICAL MICROBIOLOGY FINAL**

**SUBMITTERD TO MADAM PASHMINA**

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**“”QUESTIONS AND ANSWERS””**

QNO1:

ANS NO1**: sterilization** refers to any process that removes, kills, or deactivate all forms

Of life in particular referring to micro organisms such as fungi , bacteria, viruses, spores, unicellular eukaryotic organism such as, plasmodium etc.

Sterilization is the process by which we kill microbes from instrument during medical procedures.

1.Methods of sterilization:

* Physical method.
* A. dry heat sterilization.
* B. moist heat sterilization.
* C. sterilization by radiation ( gamma radiation)

2. chemical method.

* A. gaseous sterilization
* Sterilization by disinfectant.

3. mechanical method.

* Pass through bacteria- proof filter.

**Disinfection** may be defined as cleaning an article of some or all of the pathogenic organism which may cause infection.

Perfect disinfectant would also offer complete and full sterilization , without harming other forms of life be in expensive, and non corrosive. Unfortunately ideal disinfectant do not exist. Most disinfectant are also, by their very nature, potentially harmful(even toxics )t human animal.

* **Sanitization** is a form of disinfection, generally as it applies to inanimate object.

Inanimate non living such as table , work, bench area, hospital wall, and floor etc.

**Antisepsis** is defined as the destruction or inhibition of micro-organism on living tissues, thereby limiting or preventing the harmful results of infection.

(OR)

Antisepsis is the prevention of infection by inhibiting or arresting the growth and multiplication of germs ( infectious agent ) antisepsis implies scrupulously micro – organisms.

**Example**  of preventive measures include hand washing by their surgeons , use of sterile surgical gowns , mask, gloves and equipment, and the preparation of the patient skin with antiseptic.

QNO 5:

* ANS 5: **MYCOBACTERIA** a bacterium of a group which includes the causative agents of leprosy and tuberculosis.

Mycobacteria are a type of germ. There are many different kinds the most common one causes tuberculosis . another one cause leprosy still other cause infections that are called atypical mycobacterium infection.

* **HETEROTROPHS** an organism deriving its nutritional requirements from complex organic substance.
* an organism that is unable to synthesize its own organic carbon – based compounds from in – organic source.

**METABOLISM** is the chemical reactions in the body cells that changed food into energy. Our bodies need this energy to do every thing from moving to thinking to growing. specific proteins in the body control the chemical reactions of metabolism.

**PHOTOHETEROTROPHS** is an organism that depend s an organic matter already produced by other organism for its nourishment.

Photoheterotrophs obtain their energy from sunlight and carbon from organic material and not carbon dioxide … photoheterotrophs organisms are sometimes referred to as holophytic.

**CUTANEOUS LEISHMANIASIS** is an immune- mediated skin pathology caused mainly by leishmania major, leishmania tropica, leishmania brazilinesis , Mexicana, and amazonensis.

**QNO4:**

**ANS NO4: WATER –BORNE DISEASES**  are the ones caused by pathogenic microbes spread via contaminated water.

Majority of water- borne diseases world wide mainly affect children due to poor hygiene and weak immunity. Most of these disease are life threatening . the knowledge of these different types of water –borne diseases has come to the forefront with the advent of globalization over the past few decades.

**WATER –BORNE DISEASE AND THEIR IMPACT:**

The pathogenic micro-organisms, their toxic exudates , and other contaminates together, cause serious conditions such as, cholera, diarrhea, typhoid, amebiasis, hepatitis, gastroenteritis, giardiasis, scabies, and worm infection, to name a few.

**DIARRHEA** the most common of all water-borne diseases, diarrhea, mainly affects children below five years age. The symptoms include dizziness, dehydration, pale skin, and loss of consciousness in severe cases. It usually lasts for a couple of weeks and can turn out to be fatal if it goes untreated.

**TYPHOID**

Typhoid fever is caused by salmonella typhi bacteria transmitted via contaminated water. The patient typically suffer from prolonged episodes of fever, loss of appetite, nausea, headache, constipation, and loss of body weight.

**HEPATITIS A** this conditions mainly affects the liver and is caused by hepatitis A virus. The route of contamination is usually oral, while it also spread through physical contact with an infected person. Hepatitis A patient manifest common symptoms such as fever, nausea, and vomiting , but can suffer severe complication if they not treated in time.

**VECTOR- BORNE DISEASES.**

Vector borne infectious diseases such as

**MALARIA, DENGUE FEVER, YELLOW FEVER, AND PLAQUE,**  cause a significant fraction of the global infectious disease burden ; indeed , nearly half of the world population is infected with at least one type of vector – borne pathogen

**MALARIA** is a caused by single –cell parasitic protozoa plasmodium transmitted to human via the bite of the female anopheles mosquito. Parasite multiply in the liver of attacking red blood cell resulting in cycle of fever, chills, and sweats. Accompanied by anemia: death due to damage to vital organ and interruption of blood supply to the brain.

**DENGUE FEVER** is a mosquito –borne tropical disease caused by the dengue virus. Symptoms typically begin three to fourteen days after infection. These may include a high fever , headache, vomiting muscles and joint pains , and a characteristics skin rash.

**YELLOW FEVER** is a serious , potentially deadly flu-like disease spread by mosquitoes. Its characterized by a high fever and jaundice. Jaundice is a yellowing of the skin and eyes, which is why this disease is called yellow fever. This disease is most prevalent in certain parts of Africa and south America.

**PLAQUE**  is a bacterial disease transmitted by fleas normally associated with rats; person to –person airborne transmission also possible; recent plaque epidemic occurred in area of asia , Africa, and south America associated with rural areas or small towns and villages, manifest as fever , headache and painfully swollen lymph nodes.

**QNO3**

**ANS3: FUNGAL CLASSIFICATIONS**  fungi are classified according to their structure and method reproduction.

There are four main groups of fungi are .

* common molds ( zygomycota)
* sac fungi ( ascomycota
* club fungi ( basidiomycota
* imperfect fungi ( deuteromycota

**FUNGAL PATHOGENESIS**  is the process by which fungi infect and cause disease in a host . not all fungi are pathogens and have the ability for pathogenesis , also known as virulence.

**ENTRY**  fungi rarely cause disease in healthy immunocompetent hosts.

**ADAPTION AND PROPAGATION**  fungi often develop both virulence mechanism ( e.g. capsule and ability to grow 37c) and morphologic forms ( e.g. yeast ,hyphae, ) that facilitate their multiplication within the host

**DISSEMINATION** of fungi in the body indicate a breach of deficiency of host defense ( e.g endocrinopatheis and immune disorder)

**FUNGAL FACTOR**  enzymes such as keratinize , the presence of capsule in Cryptococcus neoformams , the ability to grow at 37c dimorphic.

**QNO2:**

**ANS NO 2:**

**COMMON PATHOGEN PREVALLING IN PAKISTAN :**

Fungal disease – specific research

Candididiasis Candida are the yeast that can be found on the skin , mucous membrane, and in the intestinal tract..

Cryptococcosis

Asperguillosis

Coccidioidomycosis( valley fewer

Histoplasmosis

Blastomycosis

Pneumocystis pneumonia.

**DISADVANTAGES OF SOME PATHOGENS:**

Require 3-5 days to complete a test, the cost is relatively high compared to other methods the technique is availability.

Some pathogens cause infections or produce toxic substance in the health.

Virus bacteria fungi protozoa are those pathogens which attack on human body and produce infection which destroy red blood cell and damage the tissue.

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