

IQRA NATIONAL UNIVERSITY

DEPARTMENT OF ALLIED HEALTH SCIENCES

Final-Term Examination 2020

Course Title: Medical microbiology DT 4th

Instructor: Muhammad sohail

Time: 6 hours

Total Marks: 50

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Q1. What do you know about parasites explain endo and ecto parasites in details ?

Ans , PARASITE

Any agent like plant and animals which draws nutrient from its host. They have ability to live in or upon host and causes severe changes in a host. Host is a organism upon which parasites gain protection life. Bacteria, viruses, fungi, protozoas and helminths are all parasites. Parasites are clasify into more classes.

1] ECTOPARASITE

Parasites that live on the superficial surface of tissue of host. Mostly they are attach on outer surface of host are known as ectoparasite.

2] ENDOPARASITE

All those parasites that lives inside a host body are called endoparasite. They have invasion known as infection. Leishmania is a best known example of endoparasite. There are so many types of endoparasites.

A] OBLIGATE PARASITES

All those parasites that depend upon the host and without host they are unable to exist in a body. The best known example of this class is *Toxoplasma gondii*.

B] FACULTATIVE PARASITES

They are live a parasitic or free living existence, when opportunity arises are called facultative parasites. Example of this group is *Naegleria fowleri*.

C] ACCIDENTAL PARASITES

They attack an unusual host are known as accidental parasites. The best known example of this class is *Echinococcus granulosus*.

D] ABERRANT PARASITES

The parasites that during migration in host, reach a site where they never live or develop further are called aberrant parasites. Example Toxocara types.

Q 2, Explain protozoa, its characteristics and morphology, also classify protozoa on the basis of motility and reproduction into its types ?

Ans ,PROTOZOA

It is a Greek word means, First animal. They are uni and multicellular eukaryotic microorganism. They have a group of about 65,000 species but most of them are harmless free living and inhabits in water and soil. They have a few species that act as pathogenic and causing million of infection in a year around the world.

A] CHARACTERISTICS

They are mostly unicellular organism with full functional cell. They move freely and show parasitics, symbiotic nature. They are act like chemohetrotrops in nature. They have locomotive organells like flagella and cilia.

B] MORPHOLOGY

Protozoa are similar to animal cell with eukaryotic nature, composed of nucleus, mitochondria. They are microscopic having size less than 50um. Their organelles are highly specialized for feeding, reproduction and movement. Two layer are found in cytoplasm named ectoplasm and endoplasm. Ectoplasm show help in movement, protectio and feeding. Mitochondria, nucleus and food protected by endoplasm. Freshwater protozoa posses contractile vacuoles to show help in pumping exess water.

CLASIFICATION OF PROTOZOA

1] FLAGELLATES

They are used flagella for their movements. The movement is whip like. Example of this class are, Trypnosoma, Leishmania.

2] CILIATES

They used cilia for their movements. Cilia is a hair like structure held with their body. Some protozoa have special kind of cilia for attachment to draw nutrients. Mostly they are act like harmless, only Balantidium coli is harmful for humans.

3]SARCODINA

Major loco motor organelles in sarcodina is pseudopodia, meaning of mention words

are, pseudo means false, podia means foot. Known example is Amoeba. They are mostly harmless. Entamoeba causes intestinal disease in humans.

4] SPOROZOITES

It is a non motile form of protozoa. They have developed sexual and asexual stages. Entire group are parasitic and harmful. Examples are Plasmodium and Toxoplasma.

INTRACELLULAR STRUCTURE

A] Cytoplasm,

It shows colours with different pigments. It has submicroscopic protein. Cytoplasm has two portions, ectoplasm acts like gel and endoplasm is voluminous and fluid. It has organelles like ribosomes, ER, Golgi, mitochondria and contractile vacuole.

NUCLEUS

Eukaryotic nucleus has chromosomes, and nucleoplasm. Macronucleus, large in size and controls metabolic activities.

REPRODUCTION IN PROTOZOA

They produce offspring by asexual and sexual methods.

A] ASEXUAL

In this reproduction, budding, binary fission and schizogony or multiple fission.

B] Sexual Reproduction

Conjugation in which two protozoa exchange genetic materials. In gametogony union of sexual differentiated cells.

Q 3, Write down names of organelles and its function present in Paramecium and Euglena?

ANS, PARAMECIUM ORGANELLES

1] CYTOPLASM

Support internal structure and shape and consistency of cell.

2] CILIA

Give help in movement and act as a food intake receptor

3] MICRONUCLEUS

Help in reproduction.

4..CONTRACTILE VACUOLE

Expell excess liquid on contraction.

5..ORAL GROOVE

Food intake through cilia.

6..MACRONUCLEUS

Non reproductive cell,function in metabolism.

7.FOOD VACULE

Digest food.

8..ANAL PORE

Feces secretion.

BJEUGLENA ORGANELLES

1 CYTOPLASM

support internal structure

2] NUCLEOUS

Cotribute ribosomes synthesis.

3] FLAGELLA

Movement.

4..CONTRACTILE VACUOLE

Expell excess water.

5] PHOTORECEPTOR

Light sensitive

6..STIGMA

Allows the cell to sense light direction.

7..CHLOROPLAST

Help in photosynthesis.

8] NUCLEUS

Control genetic materials.

Q,4,What is antibiotic resistance ,explain mechanism of bacteria resistance its causes and solution in problem.

ANS,ANTIBIOTIC RESISTANCE

It is occurs when a antibiotic lost its ability to effectively control or kill bacteria growth.The bacteria are resistant and continue to multiply in the presence of therapeutic level of antibiotic.

MECHANISM

A)DENIED ACCESS

In this case bacteria cell membrane become impermeable to antibiotics.

B) ANTIMODIFICATION OF ANTIBIOTICS

Antibiotics are modified by bacteria enzyme.

C..ALTER TARGET SITE

Antibiotic can not bind to target because target site modified.

D..PUMPING OUT

The antibiotics faster than it gets in.e.g ,tetracyclines.

E..ALTERNATIVE TARGET

Typically enzyme e.g ,alternative penicillin binding proteins in MRSA.

CAUSES

A..OVER PRESCRIPTION OF ANTIBIOTICS

Physicians prescribe medicine without detecting the pathogen.They prescribe broad spectrum antibiotics.

B..PATIENT NON COMPLIANCE

Antibiotics are prescribed in a specific dose regimen.Patient forget to take medicine on right time.

C..OVER DOSE OF ANTIBIOTICS

Antibiotics taken as OTC drugs.patient demand for more antibiotics for normal fever.

D..USE OF ANTIBIOTICS ON DOMESTIC ANIMALS

Chance for antibiotics to develop resistance. Spreading of resistance microbes through water and food.

E..POOR QUALITY OF ANTIBIOTICS

Expired and fake antibiotics.

SOLUTION TO RESISTANCE

Those antibiotics is able to use when prescribed by good health professional. Do not take antibiotics without need. Never used left over antibiotics.

Q,5, Explain mechanism of bacterial pathogenicity .Write down at least two bacterial diseases?

ANS, MACHANISM OF BACTERIAL PATHOGENICITY

1..INVASIVENESS.

They have ability to invade tissues. Encompasses mechanism for

Colonization, adherence and initial multiplication. Production of extracellular substances that improve invasion.

2..TOXIGENESES

Ability to show toxins, having two types.

A..EXOTOXINS

Are released from bacterial cells and act on tissue site removed from site of bacteria growth.

B..ENDOTOXINS

Are cell associated substances, refer to lipopolysaccharide component of outer cell membrane. Endotoxins may be released from growing bacterial cell. They are transported by blood and lymph.

TWO BACTERIAL DISEASES

1..BRONCHITIS

It is an inflammation in the lungs that some people called chest cold

SYMPTOMS

Fatigue, wheezing sound when breathing, tightness or pull pain in chest, shortness of breath.

CAUSES

Air pollution,dust,cold

2..PNEUMONIA

It is a inflammation of lungs caused by bacteria,viruses or chemicals irritants.Air sac filled from pus and liquids

SYMPTOMS

Shaking chills,chattering teeth,sever chest pain.