Name: NASEERUDDIN ID 14465 Paper Medical microbiology Bs Dt 4thsems

Question no 3

Answer difference b/w sterilization and disinfection

1) Sterilization the process of killing or removing bacteria and all other forms of living organisms

And there spares form preparation.

Essential concept in the preparation of sterile pharmaceutical products

ITS AIM

Is to provide a products that’s is safe and eliminates the possibility of introducing.

2) DISINFECTION

\* Decontamination – removal of microorganism contaminating an object

\* preservation – preventing methods of microbes –caused spoilage of susceptible products (pharmaceutical , food)

\* Sanitization – removal of microbes that pose a threat to the public health , food industry , water conditioning

\* Sanitizer – an agents , usually a detergents ; that reduced the numbers of bacteria to a safe level

METHOD OF STERELIZATION

\*THREE METHOD

1. Physical Method

a) Dry heat sterilization

b) Most heat sterilization

c) Sterilization by radiation (gamma radiation)

2. Chemical method

a) Gaseous sterilization

b) sterilization by disinfectant

3. Mechanical method

Pass through bacteria – proof filter

DRY HEAT STERILIZATION

Instrument- OVEN

OVEN

Specially designed instrument – electrically heated and thermostatically controlled.

Expose at 160C for 1 hour.

Advantages –

It is suitable method for sterilization of substance destroyed by moisture

Disadvantages

Long heating time, high temperature

MOIST HEAT STERILIZATION

Instrument – AUTOCLAVE

Heating process in autoclave – saturated steam under pressure is allowed to penetrated through materials for 15 minutes and temperature 121C.

Advantages –

Microorganism are killed most efficiency in lesser time due to high pressure saturated steam

Disadvantages-

Unsuitable for material not with standing

Temperature of 115C or more during heating

STERIZATION BY RADIATION

Two techniques involved

\*Alteration of chemicals lead to form new compound in cell destroying the micro-organism itself

\* Vital structure like nuclear protein are destroyed killing the micro-organism.

e.g Co-60 – used for gamma ray sterilization process .

Gamma rays-

\*generally obtained from radio isotope (co 60)during disintegration of unstable atoms

\*kill micro –organisms by isolating atoms of essential substance cell present in them.

CHEMICAL METHOD –

GASEOUS STERILIZATION\_

\*Ethylene oxide used.

\*Special type of chemical sterilization using gases and vapour

\*THE gas used is sa

fe and non –inflammable-

\*Now –a –days ethylene oxide most widely used gaseous sterilization agent in medical science-

MECHANICAL METHOD

\*THE SOLUTION TO BE sterilized is passed through depth filter or screen –filter which include

\*particulate filter

\*microbial filters

\*final filter

\* Pharmaceutical solution are sterilized by this method.

\*the micro-organism are physically removed by absorption on the filter medium or by mechanism.

\*filtration filling and sealing process are under a septic condition.

\*Sterilization test must be done.

QUESTION NO 04

STRUCTURE OF FUNGI

Fungi exist in two fundamental form; the filamentous (hyphal) and single called budding forms (yeast) But for the classification sake they are studied as moulds, yeast ,yeast like and dimorphic fungi.

ALL fungi are typically eukaryotic morphology .they have rigid cell wall composed of chitin , which may be layered with mannans ,glucans and other polysaccharides in a association with Cryptococcus and yeast form of histoplasma capsulatum possess polysaccharide capsule that help them to evade phagocytosis.

MOULDs:

The thallus of mould is made of hyphae which are cylindrical tube like structure that elongates by growth at tips. A mass of hyphae as known as mycelium.it is the hypha that is responsible for the filamentous nature of mould . the hyphae may be branched or branched .They may be sepate or asepate.

Mycelium are of three

1)Vegetative mycelium

2) Aerial mycelium

3)Fertile mycelium

Yeasts:

Yeast are unicelluiar spherical to ellipsoid cells. They reduced by budding ,which result in blastospore(blastconidia) formation .in some cases , as the cells buds the buds fail fail to detach and enlongate hyphae like filament called psedohyphae.

Reproduction in fungi:

1)Asexual reproduction

2)sexual reproduction

QUESTION NO 5

ANSWER: Germs that cause contagious infection are present in secretion (mucos saliva)

Or excreation(vomiting stool) of people with the infection ,your hand touching skin or objects contaminated with these body fluid and then touching your mouths, nose, EYE

Transfers dieases are that how are transfer in the hospital such as pneumonia, sexual transmited dieases

Measles ,hepatitis a,b,and C depetharia ,HIV,WHOPING COUGH, are transmited through poor hygiene

Because thay do not use hand washing and not use mask.

Pneumonia and uhooping cough is the cause how transfer in the hospital. Such infection is E.COLI infection , VABRIO COLLRA , ENTARIC FEVER , G.I.T. parasiteic dieases amabiasis ,giardiasis , SHEGLOSIS infection are transmitted in the hospital.

QUESTION NO 1

ANSWER: BACTERIA CELL STRUCTURE

Bacteria are prokaryotes, lacking well –defined nuclie and membrane bounded organelles , and with chromosome composed of a single closed DNA circle. They come in many shape and size , form minute spheres, cylinder and spiral thread to flagellated rod , and filamentous chains.

It is a gell like matrix composed of water .enzyme nutrients , water and gases and contain cell structure such as ribosome ,chromosome and plasmids . the cell envelop encases the cytoplasm and all its components plasmid are passed on to other bacteria through two means.

DNA from bacterials cells resides throughout the interior of the cells, in the cytoplasm . the main function of DNA in bacterials cells is the same as human cells transcription into ribonucleic acid (RNA0 followed by translation into amino acid and subsequent folding into proteins.

QUESTION NO 2

ANSWER:

Culture media contain nutrients and physical growth parameters necessary for microbial growth .all microorganisms cannot grow in a single culture medium and in fact many can not grow in any khown culture medium.

Organism that can not grow in artificial culture medium are known as obligate parasites.

MYCOBACTERIUM LEPRAE, rickettsias, chlamydias ,and treponema pallidum are obligate parasite.

Media are of different types on consistency and chemical composition.

1. ON CONSISTENCY:
2. Solid Media
3. Liquid media
4. ON CHEMICAL COMPOSITION
5. ROUTINE LABORATORY MEDIA
6. SYNTHETIC MEDIA .