FINAL EXAM

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BS IN MICROBIOLOGY

SEMESTER: 6TH

COURSE TITLE: BIOSAFETY AND RISK MANAGEMENT

INSTRUCTOR: MAM HUMA…

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QUESTION AND ANSWER

QUESTION NO: 1

Define standard health precautions? How exposures occur blood borne pathogen?

ANSWER:

STANDARD HEALTH PRECAUTIONS:

Standard health precautions those practices to protect all patients and also health care workers from harmful from harmful blood borne pathogens that can cause infections.

* This prevention can be followed to control different infections which can be spread through contact either through blood or different body fluids or skin.

EXPOSURE OF BLOOD BORNE PATHOGEN:

EXPOSURE:

Firstly we know about that how exposure can be occurred several sources can take part for spreading of infection like needle different sharps scalpel these sharps stick injuries or with contaminated blood spread infection.

BLOOD BORNE PATHOGEN:

Those pathogens are present in blood that can cause blood borne diseases in human and other living organisms. Different viruses are included like hepatitis B, C and HIV virus. These virus can be exposure through different sharps knife etc.

SOURCES:

Different sources are exposed to spread infection from infected person to healthy person through contact including blood body fluids or skin.

Some are

* During delivery of child infection spread from mother to child
* Diseases are transmitted through unprotected sexual intercourse.
* Sharps and needle can cause injuries
* By using tooth brushes, syringes, needle of infected person.
* Body piercing included if instruments are not properly sterilized.

HUMAN TISSUES:

* Different body fluids like
* Sweat glands
* Tears
* Saliva
* Tears.

Or

* Blood, semen
* Vaginal secretions
* Pericardial fluid etc.

QUESTION NO: 2

Describe standard laboratory design?

ANSWER:

LABORTORY DESIGNING:

Laboratory designing is multi-faceted challenge in which provide a perfect and comfortable environment in lab.

So that all risk factors are determined and different hazard identified must disposed out to provide protective environment for designing of lab.

STANDARD RULES FOR LAB DESIGNING:

SOURCES:

* We must provide staff changing room.
* Spaces must provide for informal interaction and also for designing of laboratory.
* Proper computer system available
* Proper system for production and consumption of energy.
* Suitable location for construction of laboratory
* Sinks for hand wash
* Use of water also included.
* Shelves provided for chemical storage and suitable space for physical separate chemical. For storage of material and also for collection of waste material space must be available.
* For hand washing sink must be present. Elbow tap must design for hand washing while working on different toxic chemicals.
* Proper designing of furniture used for lab must be easy to clean.
* Wood floor and tiles are not allowed for lab construction because liquid can drain through small gaps between them.

QUESTION NO: 3

What do you mean by biosafety? What are principle and purpose of biosafety in clinical health?

ANSWER:

BIOSAFETY:

Biosafety is prevention and to control different biological hazard having potential for exposers of infection. Also to protect people and environment from hazard and risk management to prevent spread of infections.

* So dealing with highly infectious agent must provide safety regulation to prevent from spreading of infection.
* Biosafety must include environmental personal and laboratory safety to stop exposure of infectious agents.

PRINCIPLES OF BIOSAFETY:

* Principles of biosafety is to describe containment which means to stop or protect spread of infection to people and also in environment with highly infectious agents.
* Containment used in biosafety may including different safety methods and sufficient facilities provided for proper management equipments must be include.
* During lab work to handled infectious agents having high exposure of spread of infection also to manage lab environment.

TYPES OF BIOLOGICAL CONTAINMENT:

There are two type of biological containment in bio safety

* PRIMARY CONTAINMENT
* SECONDARY CONTAINMENT

PRIMARY CONTAINMENT:

Primary containment is to protect laboratory environment and also people form spread of an infection.

SECONDARY CONTAINMENT:

Secondary containment to protect external environment to laboratory avoid spread of infection.

PURPOSES OF BIOSAFETY:

The main purpose of biosafety to design that framework that can manage laboratory designing, safety equipments, some practices to reduce exposure of infectious agents.

Another one to protect outside environment, laboratory workers and other people from harmful agents.

QUESTION NO: 5

1. Define bioethics
2. Principles of bioethics

ANSWER:

BIOETHICS:

Bioethics can be divided into two terms

Ethics and biomedical science

ETHICS:

Ethics mean that we defend or we decide the concept of right and wrong and is also called moral philosophy.

BIOMEDICAL SCIENCE:

Biomedical is that field in which we study about life which mean bio and medical science to know about function and composition of living organisms.

BIO ETHICS:

Bio ethics combination of ethical issues and biomedical sciences.

B: PRINCIPLES OF BIOETHICS:

JUICTICE: to promote justice and treat all in one with same behavior.

AUTONOMY: every one having its own right to take decision according to their own rules

BENEFICENCE: to provide benefit

NON MALFICENCE: to prevent from hazard

UTILITY: to promote happiness and pleasure.

QUESTION NO: 4

Describe biosafety level 4?

ANSWER:

BIOSAFETY LEVEL:

Biosafety level that biocontainment in which we isolate most pathogenic agents under observation of laboratory and some precautions.

BIOSAFETY LEVEL 4:

* The highest type of biosafety level in which we required proper precautions to handled most dangerous pathogenic agents which may spread easily through air and high transmission rate from person to person having no cure treatment.
* Biosafety level 4 is rare having require high level of precautions because highly toxic microorganism handled.
* Example Ebola virus.

REQUIREMENTS:

* Some requirements are available for BSL2
* Laboratory must be separated and system is almost enclosed.
* Different life support system required and also included many showers at side of entry and exist.
* Special wastage system for disposable of wastes
* Ultra violet room required to treat microbes having vacuum room.
* For personal protection to wear full body positive pressure suit while working in lab
* Well qualified lab workers and scientists to treat these infectious agents.

* In biosafety level 4(class 3) biosafety cabinet included.
* Filters with high power to filter air to protect from dangerous agents used inside lab.
* Proper ventilation system and in separate area provided.
* Laboratory of biosafety level 4 construct in separate zone.