Biotechnology Job Interview Questions And Answers

Interview Questions Answers

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Biotechnology Interview Questions And Answers Guide.

Question - 1:
What is clonal energy?

Ans:
It is a state, in which the antigen cannot activate the cells.
View All Answers

Question - 2:
What is an alveolar macrophage?

Ans:
Macrophage, which is found in alveolus of the lung, is alveolar macrophage.
View All Answers

Question - 3:
What is secreted immunoglobulin?

Ans:
It is a form of antibody, which is secreted by cells of B lineage.
View All Answers

Question - 4:
What is a thymocyte?

Ans:
It is a developing T cell, which is present in the thymus.
View All Answers

Question - 5:
What is the function CD4 antigen?

Ans:
It acts as a co receptor for MHC class II restricted T cell activation; receptor for HIV.
View All Answers

Question - 6:
What is exotoxin?

Ans:
Toxin produced by a microorganism, which is released into surrounding fluid, is called exotoxin.
View All Answers

Question - 7:
What are immunoglobulin folds?

Ans:
Immunoglobulin domains are folded into compact structures, which are called as immunoglobulin folds.
View All Answers

Question - 8:

What are altered self-cells?

Ans:

The cytotoxic T lymphocytes which kill foreign antigens complexes with MHC I molecules are called altered self-cells.

View All Answers

Question - 9:

What is naÃ¯ve B cell?

Ans:

Mature B cell is called naÃ¯ve B cell.

View All Answers

Question - 10:

What is clonal selection?

Ans:

Proliferation of B cells in response to interaction with an antigen is called clonal selection.

View All Answers

Question - 11:

What are endogenous antigens?

Ans:

Antigens, which are produced within the host cell, are called endogenous antigens.

View All Answers

Question - 12:

What is interferon induced antiviral state?

Ans:

Interferon reacting with interferon receptors of a cell, after which the cell enters in a state called interferon, induced antiviral state.

View All Answers

Question - 13:

How Interferon ÃŸ is produced?

Ans:

It is produced by fibroblasts.

View All Answers

Question - 14:

How Interferon a is produced?

Ans:

It is produced by leukocytes or WBCs.

View All Answers

Question - 15:

Name the major types of interferons?

Ans:

1) Interferon a
2) Interferon ÃŸ
3) Interferon ?

View All Answers

Question - 16:

What is immunopurification?

Ans:

Purifying antigens present in small quantities as a mixture by interacting an antibody to an antigen.

View All Answers

Question - 17:

What is the natural toxin found in the endosperm of castor?

Ans:

The toxin found is Ricin.

View All Answers

Question - 18:
How are the polyclonal antibodies produced?

Ans:
They are produced by different plasma cell clones.
View All Answers

Question - 19:
What are polyclonal antibodies?

Ans:
Antibodies of different specificities, which react to the same antigen, are called polyclonal antibodies.
View All Answers

Question - 20:
How monoclonal antibodies are produced?

Ans:
Monoclonal antibodies are produced by hybridoma clones.
View All Answers

Question - 21:
What is a monoclonal antibody?

Ans:
It is an antibody produced from a single antibody-producing cell.
View All Answers

Question - 22:
What is the self-antigen for autoimmune haemolytic anemia?

Ans:
RBC membrane proteins
View All Answers

Question - 23:
What is the self-antigen for insulin dependent diabetes mellitus?

Ans:
Pancreatic beta cells
View All Answers

Question - 24:
What is the self-antigen for myocardial infarction?

Ans:
The self-antigen is Heart.
View All Answers

Question - 25:
What is the self-antigen for scleroderma?

Ans:
Heart, lungs, kidney, nuclei, gastro intestinal tract
View All Answers

Question - 26:
What is the self-antigen for rheumatoid arthritis?

Ans:
Connective tissue, IgG
View All Answers

Question - 27:
What is the self-antigen for graves disease?

Ans:
Thyroid stimulating receptor
View All Answers

Question - 28:
What is the self-antigen for perinicious anemia?

Ans:
Gastric perietal cells
View All Answers

Question - 29:
What is the self-antigen for Addisons disease?

Ans:
Adrenal cells
View All Answers

Question - 30:
What is the self-antigen for good pastures syndrome?

Ans:
Renal and lung basement membranes
View All Answers

Question - 31:
What is xenograft?

Ans:
It is nothing but grafting between different species.
View All Answers

Question - 32:
What is allograft?

Ans:
It is nothing but grafting between genetically different individuals of the same species.
View All Answers

Question - 33:
What is isograft?

Ans:
It is nothing but grafting between genetically identical individuals.
View All Answers

Question - 34:
What is the target antigen for breast cancer?

Ans:
Glycoprotein
View All Answers

Question - 35:
What is the target antigen for neuroectodermal tumors?

Ans:
Glycolipids associated with neural tissues.
View All Answers

Question - 36:
What is the target antigen for breast and ovarian tumors?

Ans:
Cell surface EGF binding protein
View All Answers

Question - 37:
What is the target antigen for colon cancer?

Ans:
Glycoprotein
View All Answers

Question - 38:
What is the target antigen for acute myeloblastic leukemia?

Ans:
CD45 is for acute myloblastic leukemia
View All Answers

Question - 39:
What are exogenous antigens?

Ans:
Antigens, which are produced outside the host cell, are called exogenous antigens.
View All Answers

Question - 40:
What is the target antigen for anti idiotype tumor antigen?

Ans:
Immunoglobulin
View All Answers

Question - 41:
What is the target antigen for T cell leukemia?

Ans:
The antigen for T cell is CD5.
View All Answers

Question - 42:
What is the target antigen for B cell lymphoma?

Ans:
Antigen for B cell is CD20.
View All Answers

Question - 43:
What is the response type and activity shown by effector molecule cytotoxic T cells?

Ans:
Cell mediated immune response.
Activity: Kills virus infected self-cells.
View All Answers

Question - 44:
What is the response type and activity shown by effector molecule IFN ? secreted by TH or TC cell?

Ans:
Cell mediated immune response.
Activity: Direct antiviral activity
View All Answers

Question - 45:
What is the response type and activity shown by effector molecule compliment activated by IgG or IgM?

Ans:
It is Humoral response. Activity: Mediated opsonization
View All Answers

Question - 46:
What is the response type and activity shown by effector molecule IgM?

Ans:
It is Humoral response. Activity: Agglutination
View All Answers

Question - 47:
What is the response type and activity shown by effector molecules IgG, IgM and IgA?

Ans:
It is Humoral response. Activity: Blocks fusion of viral envelope to the cell plasma membrane.

View All Answers

Question - 48:
What are MHC molecules?

Ans:
Proteins that are encoded by major histocompatibility complex

View All Answers

Question - 49:
What is isotope switching?

Ans:
It is conversion of antibody class to another resulting from genetic rearrangement of heavy chain constant region genes in B cells. Isotope switching is also called as class switching.

View All Answers

Question - 50:
What are intracellular pathogens?

Ans:
These microbial agents grow within a cell.
Example: Viruses and intracellular bacteria like Salmonella.

View All Answers

Question - 51:
What is immune complex?

Ans:
It is a complex of antibody bound to antigen, which includes complement components.

View All Answers

Question - 52:
What is an immunotoxin?

Ans:
Immunotoxin is produced by conjugating or combining an antibody with highly toxic agent.

View All Answers

Question - 53:
What is immunofluorescence?

Ans:
Staining cells or tissues with fluorescent antibodies and visualize them under a fluorescent microscope.

View All Answers

Question - 54:
What is immuno adsorption?

Ans:
It is removal of an antigen or antibody from a sample by the process of adsorption, to which the complimentary antigen or antibody is bound.

View All Answers

Question - 55:
What are interferons?

Ans:
Interferons are small glycoproteins produced by virus-infected cells that inhibit viral infection. They are heterogeneous. Gamma interferons induce MHC class II antigens in macrophages, B cells, and endothelial cells.

View All Answers

Question - 56:
What is erythropoiesis?

Ans:
Generation of red blood cells is called as erythropoiesis.

View All Answers

Question - 57:

What is an effector response?

Ans:

It is the response produced after recognition and binding of an antigen by antibody.

View All Answers

Question - 58:

What is an effector cell?

Ans:

Any cell that can mediate immune response is called as effector cell.

View All Answers

Question - 59:

What is chronic lymphocytic leukemia?

Ans:

In this type if leukemia cancerous cells are continuously produced.

View All Answers

Question - 60:

What is BCG?

Ans:

It is an attenuated form of Mycobacterium bovis. It is used as vaccine and as an adjuvant compound.

View All Answers

Question - 61:

What is a booster?

Ans:

Boosters are given to stimulate immunological memory response.

View All Answers

Question - 62:

What is a bispecific antibody?

Ans:

It is made by cross-linking two different antibodies or by fusion of two hybridomas, which produce monoclonal antibodies.

View All Answers

Question - 63:

What is bradykinin?

Ans:

A peptide producing inflammatory response.

View All Answers

Question - 64:

What is antigenic competition?

Ans:

Antigenic competition is the inhibition of immune response to an antigen by immunization with different antigens.

View All Answers

Question - 65:

What is autograft?

Ans:

Grafting of tissues from one part of the body to another in the same individual is called as autograft.

View All Answers

Question - 66:

What is apoptosis?

Ans:

Changes those are associated with programmed cell death, including release of apoptotic bodies, blebbing, and nuclear fragmentation.

View All Answers

Question - 67:

What is antigenic drift?

Ans:

Series of point mutations that cause minor antigenic variations in the pathogens

View All Answers

Question - 68:

What is an agretope?

Ans:

The region of an antigenic peptide, which binds to MCH molecule, is known as agretope.

View All Answers

Question - 69:

What is agglutination?

Ans:

Clumping of particles or cells is called agglutination.

View All Answers

Question - 70:

What is an agglutinin?

Ans:

A substance can mediate clumping of the cells or particles.

View All Answers

Question - 71:

What is adoptive transfer?

Ans:

The ability to participate in the immune response by the process of transplantation of cells is adoptive transfer.

View All Answers

Question - 72:

What is an abzyme?

Ans:

It is a monoclonal antibody, which has catalytic activity.

View All Answers

Question - 73:

How viral load can be measured?

Ans:

Viral load is measured by PCR based techniques.

View All Answers

Question - 74:

What is the first overt indication of AIDS?

Ans:

The first overt indication of AIDS may be infection with the fungus Candida albicans, which causes sores in the mouth and in women vulvovaginal yeast infection is formed that will not respond to the treatment given.

View All Answers

Question - 75:

What does HAART do?

Ans:

HAART will lower the viral load and improves the health of the patients who are suffering with AIDS.

View All Answers

Question - 76:

What is the current treatment given to AIDS?

Ans:

Current treatment given to AIDS is HAART (highly active anti retroviral therapy).It is a combination therapy.

View All Answers

Question - 77:
What are major successful vaccines?

Ans:
Major successful vaccines are live attenuated and heat killed vaccines.
View All Answers

Question - 78:
What do most vaccines function as?

Ans:
Most of the vaccines prevent disease but not infection.
View All Answers

Question - 79:
What does myeloid immunodeficiency cause?

Ans:
Myeloid immunodeficiency causes phagocytic function, which is impaired. Those who are affected with this will suffer with increase in susceptibility to bacterial infection.
View All Answers

Question - 80:
What does immunodeficiency results?

Ans:
Immunodeficiency results in failure of one or more components of immune system.
View All Answers

Question - 81:
What does HIV results?

Ans:
HIV results in impairment of immune function by depletion oh CD4+ T cells.
View All Answers

Question - 82:
What is the treatment for HIV?

Ans:
Anti-retroviral drugs are given. They lower the viral load and gives relief from infection, but it is not permanent it is temporary relief i.e. it cannot cure.
View All Answers

Question - 83:
How HIV infection is mainly spread?

Ans:
It is mainly spread by sexual contact, blood transfers and from HIV infected mother to child.
View All Answers

Question - 84:
What is a provirus?

Ans:
It is the DNA representing, the genome of virus that has been integrated into the DNA of the host.
View All Answers

Question - 85:
What is a retrovirus?

Ans:
It is a class of viruses having RNA genome and reverse transcriptase enzyme within virus cuspid.
View All Answers

Question - 86:
How AIDS is caused?

Ans:
It is caused by the infection of HIV 1 i.e. human immunodeficiency virus.
View All Answers

Question - 87:
What is the full form of AIDS?

Ans:
Full form of AIDS is acquired Immunodeficiency syndrome.
View All Answers

Question - 88:
Name some purified macromolecules derived from pathogens?

Ans:
They are capsular polysaccharides, inactivated exotoxins and recombinant microbial antigens.
View All Answers

Question - 89:
Why purified macromolecules are used as vaccines?

Ans:
To avoid the risk associated with attenuated and killed whole organism vaccines.
View All Answers

Question - 90:
What is a toxoid?

Ans:
Inactivating the toxin with formaldehyde is toxoid.
View All Answers

Question - 91:
Normally at what age vaccination of children begins?

Ans:
Vaccination of children begins at the age of 2 months.
View All Answers

Question - 92:
How is active immunity acquired?

Ans:
Active immunity is acquired through vaccines, attenuated organisms, toxoid, natural infection, cloned microbial antigens, etc.
View All Answers

Question - 93:
How passive immunity is acquired?

Ans:
Passive immunity is acquired through natural maternal antibodies, antitoxin, and immunoglobulin.
View All Answers

Question - 94:
What happens when cutaneous exposure occurs?

Ans:
Cutaneous exposure results in skin lesions.
View All Answers

Question - 95:
What happens when gastrointestinal exposure occurs?

Ans:
Gastrointestinal exposure results in bloody diarrhea, ulcers in ileum or cecum and sepsis and it is very difficult to diagnosis.
View All Answers

Question - 96:
What is the disease caused by influenza A subtype H9N2?

Ans:
New strain of human influenza
View All Answers

Question - 97:
What is the disease caused by TSE causing agents?

Ans:
New variant of Creutzfeldt-Jakob disease
View All Answers

Question - 98:
What is the disease caused by Human herpes virus - 8?

Ans:
It is associated with Kaposi sarcoma in AIDS patients.
View All Answers

Question - 99:
What is the disease caused by Bartonella henselae?

Ans:
Cat scratch disease
View All Answers

Question - 100:
What is the disease caused by Legionella pneumophilia?

Ans:
Legionnaire's disease
View All Answers

Question - 101:
What is the disease caused by Campylobacter jejuni?

Ans:
Enteric diseases
View All Answers

Question - 102:
What is the disease caused by Human T-lymphotrophic virus II?

Ans:
Hairy cell leukemia
View All Answers

Question - 103:
What is the disease caused by Vibrio cholerae 0139?

Ans:
New strain of epidemic cholerae
View All Answers

Question - 104:
What is the disease caused by Escherichia coli 0157:H7?

Ans:
Haemorrhagic colitis
View All Answers

Question - 105:
What is the disease caused by Human T-lymphotrophic virus-I?

Ans:
T-cell lymphoma
View All Answers

Question - 106:
What is the disease caused by Encephalitozzon hellem?

Ans:
Conjunctivitis, disseminated disease
View All Answers

Question - 107:
What is the disease caused by Guanarito virus?

Ans:
Venezuelan haemorrhagic fever
View All Answers

Question - 108:
What is the disease caused by Helicobacter pylori?

Ans:
Peptic ulcers
View All Answers

Question - 109:
What is the disease caused by Hantavirus?

Ans:
Haemorrhagic fever with renal syndrome
View All Answers

Question - 110:
What is the disease caused by Cryptosporidium parvum?

Ans:
Acute chronic diarrhea
View All Answers

Question - 111:
What is the disease caused by Borrelia burgdorferi?

Ans:
Lyme disease
View All Answers

Question - 112:
What is the disease caused by Hepatitis E?

Ans:
Enteric Non-A, Non-B hepatitis
View All Answers

Question - 113:
What is the disease caused by Nipah virus and West Nile virus?

Ans:
Encephalitis
View All Answers

Question - 114:
What is the disease caused by Influenza A subtype H5N1?

Ans:
Avian influenza
View All Answers

Question - 115:
What is the disease caused by HIV?

Ans:
The disease caused by HIV is AIDS
View All Answers

Question - 116:
What is the disease caused by toxin producing strains of Staphylococcus aureus?

Ans:
Toxic shock syndrome
View All Answers

Question - 117:
What is the disease caused by Hepatitis C?

Ans:
Non-A, Non-B hepatitis are commonly transmitted via transfusion.
View All Answers

Question - 118:
What is the disease caused by Ebola virus?

Ans:
Ebola haemorrhagic fever
View All Answers

Question - 119:
What is the disease caused by Sabia virus?

Ans:
Brazilian haemorrhagic
View All Answers

Question - 120:
What is the disease caused by Rotavirus?

Ans:
The disease caused by rotavirus is infantile diarrhea.
View All Answers

Question - 121:
What are the steps in bacterial infection?

Ans:
There are four steps in bacterial infection. They are:
Attachment to host
Proliferation
Invasion of host tissue
Toxin-induced damage to host cell
View All Answers

Question - 122:
How many types of hypersensitive reactions are there?

Ans:
There are four types of hypersensitive reactions, they are:
Type I hypersensitive reaction
Type II hypersensitive reaction
Type III hypersensitive reaction
Type IV hypersensitive reaction
View All Answers

Question - 123:
Name some autoimmune diseases?

Ans:
Rheumatoid arthritis, systemic lupus erythematosus, good pasture's syndrome
View All Answers

Question - 124:
Name some Infectious diseases?

Ans:
Some of the Infectious diseases are Malaria, meningitis, trypanosomiasis, hepatitis etc...
View All Answers

Question - 125:
Give some symptoms of serum sickness?

Ans:
Symptoms include fever, weakness, rashes, with erythema and edema. Serum sickness depends on the immune complexes formed and the size of the complexes.
View All Answers

Question - 126:
What is serum sickness?

Ans:
When an individual is exposed to foreign serum antigen then a combination of symptoms are produced which is called as serum sickness.
View All Answers

Question - 127:
What is type IV hypersensitivity?

Ans:
It is cell-mediated hypersensitivity. Typical manifestations include graft rejection, dermatitis etc.
View All Answers

Question - 128:
What is type III hypersensitivity?

Ans:
It is immune complex mediated hypersensitivity. Typical manifestations include rheumatoid arthritis, serum sickness, necrotizing etc.
View All Answers

Question - 129:
What is type II hypersensitivity?

Ans:
It is IgG mediated cytotoxic hypersensitivity. Typical manifestations include erythroblastosis fetalis, hemolytic anemia, blood transfusion reactions etc.
View All Answers

Question - 130:
What is type I hypersensitivity?

Ans:
It is IgE mediated hypersensitivity. Typical manifestations include asthma, food allergies, eczema, hay fever etc.
View All Answers

Question - 131:
What is a rhogam?

Ans:
Is an antibody that binds to any of the blood cells, enter the mother's blood circulation, and facilitate their clearance by activation of B-cells and memory cell production.
View All Answers

Question - 132:
What is erythroblastosis fetalis?

Ans:
It is a hemolytic disease, which develops in newborn. Maternal IgG antibodies cross the placenta and destroy the red bleed cells. This develops when an Rh+ expresses an Rh antigen on blood cells that the mother does not express.
View All Answers

Question - 133:
What is atopic dermatitis?

Ans:
Atopic dermatitis is an inflammatory skin disease. This disease is observed frequently in young children. There will be skin eruptions.
View All Answers

Question - 134:
Explain in brief about cytokines?

Ans:
Cytokines activate inflammatory cells such as neutrophils and eosnophils.IL-5 is important in activation of eosnophils, IL-4 increases IgE production by B-cells. IL-4, Il-5, IL-6, TNF-a has been secreted by human mast cells.
View All Answers

Question - 135:
Explain in brief about leukotrienes and prostaglandins?

Ans:

Leukotrienes and prostaglandins are formed only when the mast cell undergo degranulation and enzymatic break down of phospholipids in the plasma membrane. The effects produced by them are more pronounced and long lasting than histamine. Leukotrienes mediate mucous production and bronchoconstriction. Prostaglandin D2 causes bronchoconstriction.

View All Answers

Question - 136:

What is the reaction-taking place when H2 receptor binds to mast cells and basophils?

Ans:

When H2 binds to mast cells and basophils it suppresses degranulation.

View All Answers

Question - 137:

How many types of histamine receptors are there and what are they?

Ans:

There are three types of histamine receptors. They are H1, H2 and H3.They has different tissue distributions.

View All Answers

Question - 138:

Explain in brief about histamine?

Ans:

It is formed by the decarboxylation of amino acid histidine. It accounts for 10% of granule weight. This histamine binds to specific receptors on various target cells.

View All Answers

Question - 139:

What are secondary mediators?

Ans:

Secondary mediators are produced after target cell activation or released by the break down of phospholipids membrane during the process of degarnulation. Some of the secondary mediators are leukotrienes, various cytokines, prostaglandins etc.

View All Answers

Question - 140:

What are primary mediators?

Ans:

Primary mediators are those, which are produced before degranulation. These primary mediators are stored in granules. Some of the primary mediators are histamine, heparin, proteases etc.

View All Answers

Question - 141:

What are low affinity receptors?

Ans:

Low affinity receptors play role in regulating he intensity of IgE response.

View All Answers

Question - 142:

What are high affinity receptors?

Ans:

Mast cells and basophils express high affinity receptor. The high affinity enables it to bind with IgE, despite low serum concentration of IgE.

View All Answers

Question - 143:

What is P-K reaction?

Ans:

The response produced when an allergen is injected into an individual, who is sensitive is called P-K reaction.

View All Answers

Question - 144:

Can muscular dystrophy people take clarithromycin 500mg by IV drip if they are allergic to erythromycin - cant find muscular dystrophy people in the clinical trials? Could it destroy the dystrophin gene and increase their CPK levels?

Ans:

Clarithromycin is chemically related to erythromycin and almost certainly is cross-reactive - so if you are allergic to erythromycin you will most likely be allergic to clarithromycin as well.

View All Answers

Question - 145:

Give an example for electrophilic substitution reaction?

Ans:

The species, which accepts the electrons, are called Electrophilles (or) Electrophilic reagents. When the atom (or) group of atoms present in the organic compound is replaced by another atom (or) group of atoms (electrophilic) is called electrophilic substitution reaction.

View All Answers

Question - 146:

Tell us about some drugs that can cross the blood brain barrier?

Ans:

Any drug that is designed to be given orally, i.m. s.c. or i.v. and acts on the brain MUST cross the blood-brain barrier.
E.g. Opiates, anxiolytics, SSRI's, anti-psychotics
Drug needs to be lipid (fat) soluble to cross the BBB.

View All Answers

Question - 147:

What would an inhalation, ingestion exposure as well as to the eyes of Butane, Diethylene glycol monobutyl ether, Monoethanolamine (MEA), & Sodium Hydroxide do to the human body?

Ans:

Sodium hydroxide is a very caustic substance - severe burns on skin contact, can cause severe eye irritation and burning - can severely damage surface of eye causing blindness (permanent), severe burring on ingestion and inhalation.
Butane is a gas - it is very toxic if inhaled - acts like an anesthetic - can stop person breathing very quickly.
Diethyleneglycol monobutyl ether is less acutely toxic but does have long-term toxicity on various organs.

View All Answers

Question - 148:

When we do liquid extraction, what is the effect of adding 10%acid or any base and how do we know which has to be added and up to which concentration or micro liter level can we add such buffers? If any gel formation occurs at the time of extraction, how will it affect the analysis? Shall we continue the extraction with the same or should we drop that method?

Ans:

The idea of adding acid/base is to change the lipid (and therefore organic solvent) solubility of the components you want to extract.
For example, a fatty acid is more soluble in water as a salt (and, thus, in basic conditions) whereas it is largely insoluble in water in its uncharged state (in acid conditions). So adding acid to the solution of fatty acid salt in water will render it water-insoluble and, thus, move it from the water to the organic solvent.
This is a standard extraction technique for organic acids and bases. Also, note that exact concentrations of acid/base need to be calibrated for each extraction.
Gel formation is difficult to deal with, as you cannot be sure of the extraction (difficult to mix and separate). We would suggest changing the method unless you can show a decent extraction or the description of the method says to expect a gel formation.

View All Answers

Question - 149:

How is the calculation derived for a drug to be bioequivalent with other? On which base the limit is fixed as 80-120% for a drug to be bioequivalent. What is meant by 90% confidential interval?

Ans:

To be "bioequivalent" two preparations or drugs need to give the same biological effect.
The usual "experimental error" put on this is 20% - thus, 80-120% is considered "bioequivalent."
90 percentage confidence interval means that statistically it is 90% certain that the results are equivalent.

View All Answers

Question - 150:

How is the concentration of drugs in human plasma defined?

Ans:

Some drugs bind extensively to plasma proteins (Warfarin binds 99%) whereas others have virtually no binding.
Extraction depends on the type of drug - there are different standard techniques for acidic, basic, and neutral drugs - and, indeed, some drugs need specific extraction techniques.
It is important for you doing bioequivalence studies to know exactly the proportion of drug extracted but such controls are again specific for each drug and use specific marker compounds.

View All Answers

Question - 151:

Why is buprenorphine less addictive than other opioids (like fentanyl) - is it explainable by its strength of binding to the common receptor, or?

Ans:

Buprenorphine is what is referred to as a partial agonist - i.e. it binds to the receptor but even at its maximum cannot give as much of an effect as a full agonist (such as morphine) - it is, thus, also a partial antagonist (partially inhibits the actions of full agonists).
As addiction is likely to be linked to strength of the effect of the drug, buprenorphine has less effect and, therefore, less addiction.

View All Answers

Question - 152:

Is Phenoxyethanol harmful?

Ans:

Phenoxyethanol is harmful and can be absorbed through the skin - official sites for toxicity data, however, show little toxicity in man and some toxicity (irritation) with high doses in animals. Phenoxyethanol is in cosmetics as a bactericide (kills bacteria).

View All Answers

Question - 153:

What is the definition of "Biomedical"? What topics cover the Study of Biomedical Sciences?

Ans:

The term "biomedical" covers a vast range of subjects - everything that relates biology to medicine. This can range from the obvious like Anatomy, Biochemistry, Physiology, Microbiology, Pharmacology, Genetics to the less obvious like Botany (most drugs were originally derived from plants and, thus, these is a big science called Phytopharmacology).

View All Answers

Question - 154:

Do you know how the dose for children is being estimated based on preclinical data?

Ans:

There are a number of ways of estimating children's doses from preclinical (adult) data - often depends on the therapeutic index of the drug in question (the wider the therapeutic window the less accurate the child's dose needs to be). Sometimes straight weight-basis i.e. 7kg child gets 1/10 dose of 70kg adult.
More accurate (so they say) is a dose based on body surface area (child's surface area is greater in proportion to its body weight than an adult is). There are normograms to calculate surface area from weight and height of child.
All of these may be wrong if clearance of drug in child is significantly different from adult e.g. different metabolism or different route of clearance.

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Question - 155:

Which type of immunoglobulin level will increase when an individual is exposed to a parasite?

Ans:

Serum IgE levels will increase and remain until the parasite is washed out from the body.

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Question - 156:

What are allergens?

Ans:

Allergens are non-parasitic antigens. They are capable of stimulating hypersensitive reactions in allergy conditions in an individual.

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Question - 157:

Name some common allergens associated with type-I hypersensitivity?

Ans:

Penicillin, sulfonamide, eggs, milk, dust mites, animal air, vaccines etc.

View All Answers

Question - 158:

What is atopy?

Ans:

The tendency to manifest localized anaphylactic reactions is called atopy.

View All Answers

Question - 159:

Who are atopic individuals?

Ans:

Atopic individuals are those who are having abnormal high levels of circulating IgE and more than normal number of oesinophils.

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Question - 160:

Where do most allergic reactions occur?

Ans:

Most of them occur on mucous membrane. Allergens enter the body by the process of inhalation or ingestion.

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