



**Q: Choose the Correct answer:**

1. Samples that collecting for bacterial isolation must be careful to prevent sample degradation, so use .....  
a-Transport media                      b-5% Formalin                      c- Disposable gloves                      d-Maintenance media
2. Class I Biological Safety Cabinets ..... from potentially dangerous microbiological agents.  
a- Protecting Workers, products and environment  
b- Protecting the operator, but no protection for the contents.  
c- Total protection for the operator, the environment and the contents  
d- Protection environment
3. One of the following is not a part of Personal Protective Equipment (PPE):  
a-Latex gloves.    b- Shoe cover and boots                      c- Safety cabinet                      d-Disinfectant
4. One of the below procedures is wrong for control of bleeding a person within the laboratory:  
a- Do not use a tourniquet when limb is mangled.  
b- Elevate the extremity to decrease blood flow and raise it above the heart.  
c- Place a clean cloth over the site and apply pressure  
d- Used anticoagulant drugs
5. Biological agents are categorized in Risk Groups (RG) based on their relative risk. So, the Risk group 2 is.....  
a- Not associated with disease in healthy adult humans or animals  
b- Associated with disease which is rarely serious and for which preventative or therapeutics is often available.  
c- Associated with serious or lethal human disease for which preventative or therapeutics may be available.  
d- Associated with serious or lethal animals disease
6. Endotoxin is present in outer membrane of cell wall of Gram-negative bacteria, Named:  
a- Polysaccharides                      b- Lipopolysaccharides                      c- Aminoglycan                      d-Polypeptides
7. Chemotaxis is \_\_\_\_\_  
a- The use of an inorganic chemical as an energy source  
b- The form of energy that powers the bacterial flagellum  
c- Movement by a bacterium in response to a chemical stimulus  
d- Attraction between the chemical substance
8. According to temperature as physical growth requirement, most pathogenic bacteria are:  
a- Psychrophilic                      b- Thermophilic                      c- Mesophilic                      d-Hyperthermophilic
9. Summer mastitis is a disease caused by \_\_\_\_\_  
a- *Arcanobacterium pyogenes*                      b- *Nocardia asteroides*                      c- *Actinomyces bovis*  
d- *Streptococcus agalactiae*

10. Lancefield grouping is a serological method of classification of *Streptococcus* spp. based on \_\_\_\_\_.
- a- C-substance, a cell-wall polysaccharide antigen    b- Lipopolysaccharides (LPS).  
c- Outer membrane proteins (OMPs).    d- Capsule
11. *Mycobacterium* spp. are \_\_\_\_\_.
- a- Acid fast coccobacilli    b- Acid fast bacilli    c- Acid-fast Gram-positive bacilli.  
d- Acid fast cocci
12. Yeast are:
- a- prokaryotic, multicellular microorganism    b- prokaryotic, unicellular microorganism  
c- Eukaryotic, unicellular microorganism    d- Eukaryotic, multicellular microorganism
13. Thrush of the esophagus or crop in young chickens caused by:
- a- *Candida albicans*    b- *Aspergillus flavus*    c- *Cryptococcus neoformans*    d- *Microsporidium*
14. Which of the following *Bacillus* species is motile, Haemolytic on sheep blood agar and resistant to penicillin:
- a- *B. anthracis*    b- *B. licheniformis*    c- *B. cereus*    d- *B. abortus ovis*
- 15- Tetanus toxin consists of two chains include.....
- a- The heavy chain is the toxic moiety and the light chain is responsible for receptor binding  
b- The light chain is the toxic moiety and the heavy chain is responsible for receptor binding.  
c- The light chain and heavy chain are toxic moieties  
d- The light chain and heavy chain are toxic moieties and are responsible for receptor binding
16. The function of the R plasmid is:
- a- Produce bacteriocins.    b- Carry virulence genes.  
c- Carry antibiotic resistance genes    d- carry genetic information for RNA replication
17. Enzootic abortion of ewes (EAE) is caused by:
- a- *Brucella melitensis*    b- *Brucella abortus*  
c- *Chlamydia abortus*    d- *Salmonella typhimurium*
18. Fowl typhoid in poultry caused by.....
- a- *Avibacterium paragallinarum*    b- *Pasteurella multocida*  
c- *Salmonella gallinarum*    d- *Salmonella pullorum*
- 19- The growth requirements for *Pasteurella* species are:
- a- Facultative anaerobes    b- Facultative aerobes    c- Anaerobes    d- Obligate Aerobes
- 20- Bacteria that tolerate bile salts in MacConkey medium and appear on a bipolar Geimsa smear
- a- *Pasteurella multocida*    b- *Mannheimia haemolytica*  
c- *Moraxella bovis*    d- *Pasteurella* species
- 21- The most suitable sample for examining keratoconjunctivitis in cows infected with *Moraxella bovis* is:
- a- Nasal secretions    b- Lacrimal secretion    c- serum sample    d- blood sample
- 22- *Moraxella bovis* is very sensitive to:
- a- Chloramphenicol    b- Oxytetracycline    c- Desiccation    d- Penicillin
- 23- Cell-mediated immunity is necessary to protect against infection by facultative intracellular bacteria, such as:
- a- *Nocardia* species    b- *Moraxella bovis*    c- *Histophilus* species    d- *Pasteurella* species
- 24- *Histophilus somni*, *Haemophilus parasuis*, and *Avibacterium paragallinarum* are differentiated by requirements for
- a- V growth factor    b- X growth factor    c- X and V growth factors    d- Z factor



- 25-Colonies of *Haemophilus* species grow close to the *S. aureus* colony, a phenomenon referred to as:  
 a-Symbiosis      b. Satellitosis      c. Satellitism.      d-Synergism
- 26- Bovine actinomycosis (lumpy jaw) disease caused by:  
 a- *Actinomyces bovis*      b- *Actinomyces viscosus*  
 c- *Actinomyces pyogenes*      d- *Pasteurella* species
- 27- Selective media of *Burkholderia pseudomallei* is .....  
 a- Ashdown's media      b- Mannitol salts agar      c- MacConkey agar      d-Edwards medium
- 28- *Salmonella* is the genus belonging to Family *Enterobacteriaceae*, Gram-negative rods, motile except .....and .....  
 a- *Salmonella* Gallinarum and *Salmonella pullorum*  
 b- *Salmonella* Typhi and *Salmonella* Paratyphi  
 c- *Salmonella* Enteritidis and *Salmonella* Dublin  
 d-*Salmonella typhi* and *Salmonella* Dublin
- 29- Enteric Yersinioses caused by.....  
 a- *Yersinia pestis*      b- *Yersinia enterocolitica*      c- *Yersinia pseudotuberculosis*.  
 d- *Yersinia ruckeri*
- 30-..... Gram-negative, anaerobic bacteria, and produce foot rot disease in sheep in association with other pathogens.  
 a- *Dichelobacter nodosus*      b- *E. coli*      c- *Proteus mirabilis*      d-*pseudomonas* spp
- 31-..... in lambs is commonly septicemic and peracute.  
 a- Circling disease      b- Coliform mastitis      c- Colibacellosis      d-summer mastitis
- 32- Differentiation of the *Enterobacteriaceae* according to lactose fermentation in MacConkey agar, the colonies of lactose fermenters and the surrounding medium are ..... due to acid production from lactose.  
 a- Pale      b- Red      c- Pink      d-yellow
- 33- *Campylobacter* species are:  
 a-Slender, curved, motile, Gram-positive rods.  
 b-Slender, curved, motile, Gram-negative rods.  
 c- Thick, non-motile, Gram- positive rods.  
 d- Thick, -motile, Gram-negative rods.
34. One of the statements below is correct about *Staphylococcus* spp.  
 a- They are Gram-negative cocci      b- They spore forming bacteria  
 c- They form clusters resembling bunches of grapes  
 d- They are Gram-positive bacilli
35. *Streptococcus equi* that affects the upper respiratory tract of horses causes .....  
 a- Undulant fever      b- Abortion      c- Strangles      d-pneumonia
36. In stained smears, .....occur singly, in palisades of parallel cells and in angular clusters resembling Chinese characters.  
 a- *Moraxella* spp.      b- *Staphylococcus* spp.  
 c- *Corynebacterium* spp.      d-*Salmonella* spp
37. .... can grow over a wide temperature range from 4 °C to 45 °C and can tolerate pH values between 5.5 and 9.6.  
 a- *Listeria* spp.      b- *Brucella* spp.      c- *Pasteurella* spp.      d-*pseudomonas* spp



38. *Brucella* spp. are needed 5 - 10% CO<sub>2</sub> for primary isolation, which means they are.  
 a- Capnophilic bacteria    b- Anaerobic bacteria    c- Aerobic bacteria    d-obligatory anaerobes
39. Abortion in cattle is mainly caused by:  
 a- *Brucella abortus*    b- *Brucella neotomae*    c- *Brucella canis*    d-*Brucella ovis*
40. Erythritol, a polyhydric alcohol which acts as a growth factor for *Brucellae* in the affected animals, is present in high concentrations in the.....  
 a- Brain    b- Placenta    c- lungs    d-liver
41. Pathogenic *Mycobacteria* grow slowly on solid media and need.....to grow.  
 a- 3 to 6 hours    b- 3 to 6 days    c- 3 to 6 weeks    d-6 months
42. The standard setting for a hot-air oven is  
 a. At least 2 hours at 160° C    b. At least 1 hour at 180° C  
 c. At least 2 hours at 180° C    d- At least 1 hour at 160° C
- 43- Dry heat kills microorganisms  
 a- By oxidation effects    b- Reduction effects    c- Coagulation effects    d-challenge test
- 44- The period in which microorganisms are growing and dividing at the maximal rate is called:  
 a- Exponential phase    b- Stationary phase    c- Lag phase    d-anaphase
- 45- Transport of molecules against a concentration gradient, the material is more concentrated on the inside of the cell than on the outside, it is called:  
 a- Simple diffusion    b- Active    c- Passive    d- double diffusion
- 46- Bacteria do not use O<sub>2</sub> but can grow when it is present – Often ferment glucose to lactic acid, and are called:  
 a- Anaerobic    b- Microaerophiles    c- Aerotolerant    d-obligate aerobic
- 47- A classification system that groups organisms together based on the similarity of their observable characteristic is :  
 a- Phylogenetic classification    b- Genotypic classification  
 c- Phenetic classification    d-serotype classification
- 48-Variant strains that have distinct antigenic characteristics are called  
 a- Strains    b- Serovars    c- Biovars    d-isolates
- 49-. Dietary supplements or food products that contain beneficial, friendly, and good live bacteria or yeasts are called.....  
 a- Prebiotic    b- Probiotic    c- Normal flora    d-biofilm
- 50- best describes a primary immune response was  
 a-Small increase in specific IgG after 7-10 days    b-increase in specific IgM after 2-3 days  
 c-increase in specific IgM after 7-10 days    d- increase in specific IgA after 2-3 days
- 51-following is responsible for secondary immune responses  
 a-naïve lymphocytes    b- memory lymphocytes    c-effector lymphocytes    d-Cytotoxic T cell
- 52- Which of the following is an accurate description of the consequences of the positive and negative selection of T cells in the thymus?  
 a-It results in a diverse population of T cells with high affinity for self (MHC/peptide)  
 b-It results in a diverse population of T cells with low affinity for self (MHC/peptide)  
 c-It leads to the deletion of T cells with a high affinity for self (MHC/peptide)  
 d- It results in a diverse population of B cells with high affinity for self (MHC/peptide)
- 53- Which of the following is a secondary lymphoid organ?  
 a-Bone marrow    b- Hypothalamus    c- Spleen    d-liver



- 54- which of the following cell types mediates adaptive immune responses?  
 a- Lymphocyte      b- Macrophage      c- Natural Killer cell      d-APC
- 55- Which of the following toll like receptors is responsible to detection of flagellin (flagella . protein of bacteria)?  
 a-TLR2      b-TLR4      c-TLR5      d-TLR1
- 56- The CD4 glycoprotein on the naïve T cell acts as a co-receptor, that binding to  
 a-MHC class I molecules      b-MHC class II molecules      c-MHC class III molecules  
 d- MHC class IV molecules
- 57- Which of the following cell is involved in the activation of many types of immune cells?  
 a-B-cell      b-T-cell      c-Phagocytic cell      d-lymphocyte
- 58-Among the components of innate immunity first line of defense is  
 a-Skin and mucous membranes      b-Natural killer cells and phagocytes  
 c-CMI      d-B cell
- 59- Which of the following DOES NOT play a role in antigen presentation?  
 a. MHC class I molecules      b-MHC class II molecules  
 c. MHC class III molecules      d- MHC class IV molecules
- 60- Toxoid vaccines provides protection only against \_\_\_\_\_  
 a-Toxin which was prepared from it  
 b-All bacterial diseases      c-All viral diseases      d-parasitic infection
- 61- Antigenicity: means the ability of an antigen to bind with \_\_\_\_\_  
 a-O-Ag      b-H-Ag      c-Antibodies      d-toxin
- 62- Pili and fimbriae are short projections that cover the surfaces of some Gram-negative bacteria; they are classified as \_\_\_\_\_  
 a-O-antigens      b-H-antigens      c-F or K-antigens      d-virulent Ag
- 63- Immunoglobulins are produced by \_\_\_\_\_  
 a-Plasma cell      b-B cell      c-Tcell      d-phagocytic cell
- 64- Which of the following cells Act as antigen presenting cells?  
 a-Dendritic cells      b-Memory T cell      c-Plasma cells      d-phagocytic cell
- 65- Type 3 hypersensitivity reactions are mediated by antibodies called \_\_\_\_\_  
 a-IgE and IgD      b-IgG and IgM      c-IgA and IgD      d-only IgA
- 66- Organ grafts transplanted between animals of different species known as \_\_\_\_\_  
 a-Autograft      b-Allografts      c-Xenografts      d-Isograft
- 67- The CD8 glycoprotein on the naïve T cell acts as a co-receptor, that binding to \_\_\_\_\_  
 a. MHC class I molecules      b- MHC class II molecules  
 c-MHC class III molecules      d- MHC class IV molecules
- 68- Each L chain of immunoglobulin is composed of \_\_\_\_\_  
 a-100 amino acids      b-220 amino acids      c-440 amino acids      d-50 amino acids
- 69- Which of the following immunoglobulins is mainly present in body secretions?  
 a.IgG      b. IgM      c. IgA      d.IgD
- 70- There are \_\_\_\_\_ genera in the subfamily Parvovirinae  
 a-1      b-4      c-3      d-2
- 71- In infections of Feline Panleukopenia of the fetus cat or newborn kitten where there is considerable cell division in many organs, the infection may be \_\_\_\_\_  
 a-Narrow      b-acute      c- widespread      d-limited
- 72- Orf virus is transmitted by the \_\_\_\_\_ from infected animals  
 a-urinary tract route      b- gastrointestinal route  
 c- respiratory route      d-Reproductive tract
- 73-Capripox virus cause \_\_\_\_\_ important disease in animals  
 a-1      b-4      c-3      d-2



- 74- Orf belong to genus  
a-capripox virus      b-orthopox vieus      c-parapox virus      d-sheep pox
- 75- the genus Atadenovirus that includes viruses that infect a \_\_\_\_\_  
a-Narrow host rang      b-limited host rang      c- broad host range      d-acute
- 76- The genome of adenoviruses consists of a \_\_\_\_\_ DNA  
a-ssDNA      b-ssRNA      c- dsDNA      d-dsRNA
- 77- the family circoviridae contains \_\_\_\_\_ genus  
a-2      b-3      c- 1      d-4
- 78- The natural infection of circovirus in bird occurs primarily in less than \_\_\_\_ years of age  
a-10      b- 7      c-5      d-9
- 79-Papovaviridae comprises \_\_\_\_\_ rather disparate genera  
a-3      b- 4      c-2      d-1
- 80- Initiation of infection occur when the virion contacts to \_\_\_\_\_  
a. Spikes on an inappropriate host cell  
b. Spikes of on an appropriate host cell  
c. Receptors on an appropriate host cell  
d-receptors to virus
- 81- In Baltimore classification, the viruses were divided in to \_\_\_\_\_ groups according to \_\_\_\_\_  
a. Six, nucleic acid comparing  
b. Six, capsid comparing  
c. Seven, nucleic acid comparing  
d. five, nucleic acid comparing
- 82- All of the followings are associated with genetic recombination in some viruses, EXCEPT? \_\_\_\_\_  
a. Emergence of new virus  
b. Alteration of transmission vector specificities  
c. Decrease in virulence and pathogenesis  
d. Mutation in the virus nucleic acid
- 83- The function of viral capsid is \_\_\_\_\_  
a. Protection of viral genome from physical destruction      b. protection of capsomers  
c. Protection of viral DNA from mutation      d- Protection of virus to immune response
- 84- Which of the following virus families has segmented nucleic acid? \_\_\_\_\_  
a. Orthomyxoviridae      b. paramyxoviridae      c. Rabdoviridae      d.poxviridae
- 85- Haemagglutinin spikes in orthomyxovirus are responsible for \_\_\_\_\_  
a.Releasing of virus      b. Attachment of virus      c. maturation of virus      d-mutation
- 86- Viruses are not cells - They are acellular particles that lack normal cell organelles including \_\_\_\_\_  
a. Ribosomes and tRNA only      b.Metabolic enzymes only  
c- Ribosomes, metabolic enzymes, tRNA .... Etc      cytoplasm
- 87- Copy-choice recombination usually occurs in all of the following viruses EXCEPT? \_\_\_\_  
a. Picorna virus      b.Corona virus      c.Orthomyxo virus      d.poxviridae
- 88- According to the pathogenicity, the avian influenza viruses divided in to \_\_\_\_\_  
a. Velogenic and non-pathogenic      b. Mesogenic and lentogenic  
c.HPAI and LPAI      d. Mesogenic and velogenic
- 89- Biological Safety Cabinets (BSCs) are commonly used in laboratories working with \_\_\_\_\_  
a. Chemical agents      b. Toxic agents  
c. Biological agents      d.radical materials



