



KENYATTA UNIVERSITY
EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE AND
BACHELOR OF SURGERY (MBChB)

HPA I : PATHOLOGY I PAPER II: MULTIPLE CHOICE QUESTIONS

3RD TRIMESTER 2020/2021

TIME: 2 Hours

INSTRUCTIONS:

This paper consists of 100 multiple choice questions

Each question carries one mark

Answer all the questions in the booklet provided

1. ONE of the following statements is FALSE
 - a) Pulmonary embolism commonly results from mural thrombus
 - b) The commonest source of arterial embolism is the left ventricle
 - c) Most pulmonary emboli are clinically symptomatic
 - d) Thrombi in superficial veins of lower limb vein are a common source of systemic embolism
2. An adaptive response that leads to an increase in size of cells is referred to as:
 - a) Atrophy
 - b) Hypertrophy
 - c) Hyperplasia
 - d) Metaplasia
3. ONE of the following statements is true
 - a) Fatty change represents irreversible cell injury
 - b) Dystrophic calcification commonly occurs with hypercalcaemia.
 - c) Dystrophic calcification can be accentuated by hypercalcaemia.
 - d) Lipofuscin is a hemoglobin derived pigment.
4. ONE of the following is a chemotactic agent
 - a) Histamine
 - b) Complement fragment C3b
 - c) Bacterial products
 - d) Serotonin

5. One of the following statements is true
- Malignant tumors are always capsulated
 - Rate of growth is the best criteria for differentiating benign from malignant tumors
 - Anaplasia is a hallmark of malignancy
 - Benign tumors may have capacity to metastasize
6. The most common source of embolus in femoral artery is thrombus in
- left ventricle
 - right ventricle
 - deep vein of lower extremities
 - an aortic aneurysm
7. The cause of exudative oedema is
- Sodium and water retention
 - Increased hydrostatic pressure
 - Reduced plasma oncotic pressure
 - Inflammation
8. The most common cause of delayed wound healing is
- Nutrition status
 - Hormones
 - Infections
 - Lack of blood supply
9. A 13-year-old female went for ear piercing. On healing, she developed tumor like complication. ONE of the following define the complication
- Hypertrophic scar
 - Keloid
 - Squamous cell carcinoma
 - Ulceration
10. When the vascular events in acute inflammation are arranged in order, the third event is
- Stasis
 - Increased vascular permeability
 - Vasodilation
 - Transient vascular constriction
11. The immune response that is specific to transplantation is
- Indirect allorecognition
 - Activation of the innate immune response
 - Activation of the adaptive immune response
 - Direct allorecognition
12. The class of drugs that is NOT used to treat graft rejection is
- Calcineurin Inhibitors
 - PARP inhibitors
 - Antiproliferative and antimetabolic drugs
 - Malononitrilamides

13. Early outcomes after kidney transplantation have improved dramatically, while long term outcomes have improved to a much lesser extent. The predominant cause of a lack of improvement in long term outcomes is

- a) Chronic antibody-mediated rejection
- b) Recurrent glomerulonephritis
- c) Acute cell mediated rejection
- d) Calcineurin inhibitor toxicity

14. People who have a primary immunodeficiency disease are most at risk of

- a) Heart disease
- b) Infections
- c) Cancer
- d) Diabetes

15. ONE of the following is NOT a strategy for inducing tolerance

- a) Engaging inhibitory receptors
- b) Treg targeted therapies
- c) Administration of antigen in tolerogenic form
- d) Antigen-specific lymphocyte cell transfers

16. An example of a T-dependent B-cell mitogen is

- a) Concanavalin A
- b) Lipopolysaccharide
- c) Phytohaemagglutinin
- d) Pokeweed mitogen

17. One of the following receptors is NOT expressed by activated macrophages during a bacterial infection

- a) Complement receptor
- b) Fc-gamma receptor
- c) Inhibitory receptor
- d) Toll-like receptor

18. The cluster of differentiation molecule that defines the functional characteristic of a peripheral natural killer cell is

- a) CD 45
- b) CD 16
- c) CD 8
- d) CD 4

19. The followings are examples of the first line of host defence against foreign microbial and endoparasitic infections **EXCEPT**

- a) Inflammatory response barrier
- b) Physical barrier
- c) Chemical barrier
- d) Genetic barrier

20. A co-stimulatory signal required to induce proliferation of antigen-primed T-cells upon contact between the T-cell and an APC is
- CD 28 and CD 20
 - CD 28 and B7
 - B7 and CD 8
 - B7 and CD 4
21. The two antimicrobial agents produced by macrophages with a role in natural immunity against pathogens are
- Cytokines and chemokines
 - Complement and natural antibody
 - Interleukin-1 and transforming growth factor-beta
 - Lysozymes and interferons
22. One of the following pathogens evades host humoral immune responses through the strategic mechanism of antigen shedding:
- Plasmodium falciparum*
 - Pseudomonas aeruginosa*
 - Toxoplasma gondii*
 - Trypanosome rhodensiense*
23. The following statements are true regarding dendritic cells **EXCEPT**
- They have inherent phagocytic capability and are constitutively present in human mucosal epithelia, lymphoid tissue and organ parenchyma to detect invading microbes
 - Most dendritic cells belong to the lymphoid lineage of haematopoietic cells and their progenitor cell can differentiate into lymphocytes but not macrophages
 - They express more different types of toll-like receptors and cytoplasmic pathogen recognition receptors compared to any other leucocytes
 - Plasmacytoid dendritic cells are poor phagocytes but are a major source of antiviral type I interferons
24. The meaning of the statement, "B-lymphocytes are MHC-non-restricted functionally" is
- B-lymphocytes interact with antigen in the context of all classes of MHC molecules
 - Antigens select B-lymphocytes and MHC molecules in the absence of T-lymphocytes
 - B-lymphocytes are normally tolerant to all antigens including superantigens
 - T-independent antigens interact with B-lymphocytes independent of MHC molecules

25. In accordance with the "Kinetic signaling model" during thymic T cell differentiation, a thymocyte commits to the CD4 T-cell lineage if it
- Was positively selected and expressed CD4 co-receptor that co-engaged MHC with TCR for a strong signal
 - Randomly generated a TCR with an affinity for MHC Class II and the TCR-CD4 bound MHC Class II together
 - Received a continuous signal in response to TCR-CD4 engagement
 - Was bearing high affinity receptors for self-MHC and peptide complex formed results in self-tolerance
26. Patau syndrome is due to one of the following
- Trisomy 21
 - Trisomy 18
 - Trisomy 17
 - Trisomy 13
27. Mitochondrial DNA is
- Paternally inherited
 - Maternally inherited
 - Horizontal inheritance
 - Vertical inheritance
28. Dominant negative inheritance is seen in
- Ehler Danlos syndrome
 - Cystic fibrosis
 - Hunter syndrome
 - Haemophilia
29. Lead poisoning produces the following change in red cells
- Pappenheimer bodies
 - Howell-Jolly bodies
 - Basophilic stippling
 - Heinz bodies
30. Each of the following statements concerning the variable regions of heavy chains and the variable regions of light chains in a given antibody molecule is correct EXCEPT
- They have the same amino acid sequence
 - They define the specificity for antigen
 - They are encoded on different chromosomes
 - They contain the hypervariable regions
31. Complement lyses cells by
- Enzymatic digestion of the cell membrane
 - Activation of adenylate cyclase
 - Insertion of complement proteins into the cell membrane
 - Inhibition of elongation factor-2

32. One of the following is the site at which lymphocytes can leave the blood and gain entry into the lymph nodes and the lymphocyte cell surface protein that mediates such access
- a) Germinal center: CD62L (L-selectin)
 - b) Lymphoid follicle: CD62L (L-selectin)
 - c) Periaarterial lymphatic sheath: CCR7
 - d) High endothelial venules: CD62L (L-selectin)
33. One of the following represents the mechanisms by which immune complexes (ICs) are normally cleared from the circulation
- a) IC are solubilized by C3a
 - b) IC are solubilized by C5a
 - c) Red blood cells capture ICs from blood via Fe receptors
 - d) C3b solubilizes IC and attaches to red blood cells via complement receptors
34. One of the following structural features is uniquely found on IgA in breast milk and not found on serum IgM
- a) FcR
 - b) Hinge region
 - c) J chain
 - d) Secretory piece
35. A person is experiencing a primary infection with SARS-CoV-2 virus. B cells activated in the primary infection secrete one of the following classes of antibody first
- a) IgA
 - b) IgE
 - c) IgG
 - d) IgM
36. The interaction of one of the following molecules on the membrane of cells with its ligand signals apoptosis
- a) B7 (CD80/86)
 - b) CD40
 - c) CTLA-4 (CD152)
 - d) Fas (CD95)
37. Vaccination operates to generate a humoral immune response to the immunogen(s). One of the following represents the critical function of the resultant humoral response in protecting vaccinated patients from future infections by targeted pathogenic agents
- a) Opsonization
 - b) Neutralization
 - c) Complement activation
 - d) Antibody-dependent cell cytotoxicity

38. Patients with severely reduced C3 levels tend to have
- Increased numbers of severe viral infections
 - Increased numbers of severe bacterial infections
 - Low gamma globulin levels
 - Frequent episodes of haemolytic anaemia
39. A 6-year-old male received scheduled immunizations against diphtheria, tetanus, and pertussis throughout the first 2 years of his life. Upon boosting, he demonstrated increased antibody affinity to binding diphtheria antigens. The mechanism that affects immunoglobulin antigen binding affinity which occurs after formation of a mature B cell is
- Isotype switching
 - Junctional diversity
 - Somatic hypermutation
 - V gene segment diversity
40. A medical student is suspected of exposure to HIV after an accidental needle stick. It is determined that a Western blot analysis will be used to test serum samples for the presence of antibodies. The reason that the Western blot was chosen over an ELISA was
- Multiple antigenic epitopes can be distinguished
 - Repeat samples can be tested simultaneously
 - Sensitivity is higher
 - Quantitative analysis of reactivity is provided
41. *Trypanosoma cruzi* initially penetrates through the mucous membranes on the skin and then multiplies in a lesion known as a chagoma. In the chronic stage of the disease, the main lesions are often observed in the
- Spleen and pancreas
 - Heart and digestive tract
 - Liver and spleen
 - Digestive tract and respiratory tract
42. Amoebae that are parasitic in humans are found in the oral cavity and the intestinal tract. One of the following statements best describes these intestinal amoebae
- They can cause peritonitis and liver abscesses
 - They are usually transmitted as trophozoites
 - They occur most abundantly in the duodenum
 - Infection with *Entamoeba histolytica* is limited to the intestinal tract
43. One of the following organs is mostly likely to atrophy due to advanced echinococcosis
- Pancreas
 - Kidney
 - Spleen
 - Liver

44. Blackwater is a complication resulting from infection with
- a) *Trypanosoma cruzi*
 - b) *Plasmodia falciparum*
 - c) *Leishmania major*
 - d) *Toxoplasma gondii*
45. One of the following is not a mechanism of hepatosplenomegaly
- a) Excessive storage
 - b) Infiltration
 - c) Congestion
 - d) Phagocytosis
46. Schistosomiasis is a disease characterized by granulomatous reactions to the ova or to products of the parasite at the place of oviposition. Clinical manifestations include one of the following
- a) Bladder wall hyperplasia
 - b) Pulmonary embolism
 - c) Splenomegaly
 - d) Cardiac abnormalities
47. A medical technologist visited Scandinavia and consumed raw fish daily for 2 weeks. Six months after he returned home, he had a routine medical checkup and was found to be anemic. His vitamin B₁₂ levels were below normal. The most likely cause of her vitamin B₁₂ deficiency anemia is
- a) Excessive splenic removal
 - b) Malabsorption
 - c) Diphyllbotriasis
 - d) Cysticercosis
48. Human infection with the beef tapeworm, *Taenia saginata*, usually is less serious than infection with the pork tapeworm, *T. solium*, because
- a) Acute intestinal stoppage is less common in beef tapeworm infection
 - b) Larval invasion does not occur in beef tapeworm infection
 - c) Toxic by-products are not given off by the adult beef tapeworm
 - d) The adult beef tapeworms are smaller
49. A tissue-dwelling trematode that may be found in feces can also be detected in
- a) Duodenal contents
 - b) Blood
 - c) Biopsied muscle
 - d) Sputum

50. One of the following organisms may be ingested with raw fish, affects the liver, and has an operculated egg

- a) *Paragonimus westermani*
- b) *Clonorchis sinensis*
- c) *Schistosoma mansoni*
- d) *Schistosoma haematobium*

51. A string test is used to collect cysts of parasites found in

- a) Vaginal secretions
- b) Duodenal contents
- c) Blood
- d) Sputum

52. A person who had recently consumed half a box of raspberries came down with severe watery diarrhea. Surprisingly, the patient felt tired for a few days and had a low-grade fever. The most likely cause of infection is

- a) *Cryptosporidium spp*
- b) *Cyclospora spp*
- c) *Isospora spp*
- d) *Toxoplasma spp*

53. One of the following is a drug of choice for the treatment of visceral leishmaniasis

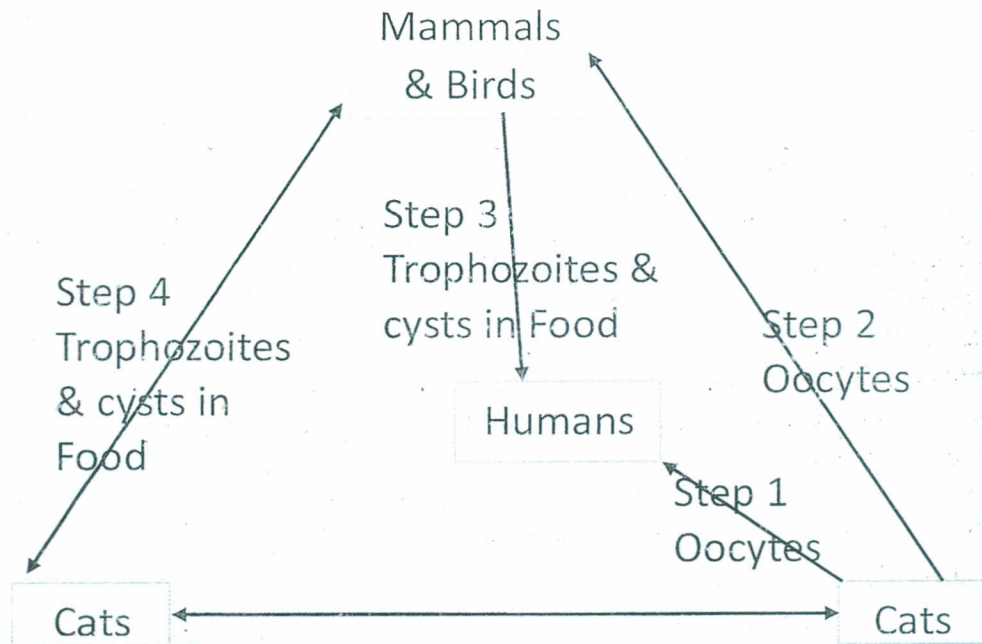
- a) Sodium stibogluconate
- b) Melarsoprol
- c) Suramin
- d) Iodoquinol

54. The best time to collect blood for *Plasmodium* parasites detection is

- a) Between paroxysms
- b) During paroxysms
- c) Early morning
- d) Immediately after mosquito bite

55. To control toxoplasmosis in pregnancy, one of the following steps of the life cycle of *Toxoplasma* would be most practical to interrupt

- a) Step 1
- b) Step 2
- c) Step 3
- d) Step 4



56. All of the following statements are true about arthropods EXCEPT
- Arthropods are also affected by the parasitic pathogen they transmit to humans
 - Arthropods are well adapted to parasitic pathogens and no damages are produced
 - Transmission of parasitic pathogens to man and other higher animals is accidental
 - All microorganism that are parasites of arthropods are also transmissible to man
57. Complete metamorphosis in the development of arthropods involves all of the following EXCEPT
- Molting of the exoskeleton when the new one outgrows the old one
 - Arthropods' hard exoskeletons is made of chitin
 - Chitin in the exoskeletons is a protein derivative
 - Exoskeletons is all made of glucose derivative
58. One of the following diseases is transmitted by mechanical vector
- Amoebiasis
 - Trypanosomiasis
 - Leishmaniasis
 - Malaria
59. Mange mites are associated with one of the following health conditions
- Dermatitis
 - Myiasis
 - Tungiasis
 - Filariasis

60. All of the following parasites are soil transmitted helminthes EXCEPT
- a) *Ascaris lumbricoides*
 - b) *Ancylostoma duodenale*
 - c) *Trichuris trichuria*
 - d) *Wuchereria bancrofti*
61. Consumption of undercooked pork may cause one of the following infections
- a) Ascariasis
 - b) Trichinelosis
 - c) Trichuriasis
 - d) Filariasis
62. ONE of the following parasites is not a nematode
- a) *Ascaris lumbricoides*
 - b) *Hymenolepis nana*
 - c) *Trichinella spirallis*
 - d) *Enterobius vermicularis*
63. The study of viruses has led to the discovery of the following cellular components EXCEPT
- a) Promoters for eukaryotic RNA polymerase
 - b) Oncogenes
 - c) Double helix structure of DNA
 - d) RNA splicing
64. ONE of these statements is true about most DNA viruses
- a) Double-stranded RNA genome
 - b) Replicate in the cytosol
 - c) Icosahedral symmetry
 - d) Encode their own replication enzymes
65. For hepadnaviruses, the protein that is used to synthesize the partially single-stranded DNA genome that is packaged in virions is
- a) RNA-dependent-DNA-polymerase
 - b) RNA-dependent-RNA-polymerase
 - c) DNA-dependent-RNA-polymerase
 - d) DNA-dependent-DNA-polymerase
66. The role of poly-purine tract in retrovirus replication is to
- a) Serves as template for positive strand synthesis
 - b) Endonuclease activity of the RNA:DNA hybrid
 - c) Serves as a primer for positive strand synthesis
 - d) Serves as a terminator for the positive strand synthesis

67. ONE of the following is not an intrinsic defense mechanism against viral infections
- a) Natural Killer cells
 - b) RNA silencing
 - c) Apoptosis
 - d) Antiviral proteins
68. Testing for SARS-COV2 cannot be done from the following clinical specimens
- a) Serum
 - b) Urine
 - c) Naso-pharyngeal swab
 - d) Rectal swab
69. Gullaine-Barre syndrome is the main neurologic manifestation associated with
- a) Human Immunodeficiency Virus
 - b) Hepatitis B Virus
 - c) Zika virus
 - d) Human cytomegalovirus
70. Herpes simplex mainly goes into latency in neuronal cells of
- a) Dorsal root ganglion
 - b) Sciatic nerve
 - c) Olfactory nerve
 - d) Median nerve
71. ONE of these sexual practices has more risk for HIV transmission
- a) Anal sex
 - b) Vaginal sex
 - c) Oral sex
 - d) Kissing
72. Vaccines are available for one of the following viral-induced hepatitis
- a) Hepatitis E
 - b) Hepatitis B
 - c) Hepatitis C
 - d) Hepatitis A
73. A 73-year-old woman is admitted to the hospital for intravenous treatment of an abscess caused by *Staphylococcus aureus*. Subsequent to her treatment and discharge from the hospital, it is necessary to disinfect the hospital room. One thousand of the *S. aureus* cells are exposed to a disinfectant. After 10 minutes, 90% of the cells are killed. Calculate the number of cells that remained viable after 20 minutes
- a) 500
 - b) 100
 - c) 10
 - d) 1

74. Bacteria that are obligate intracellular pathogens of humans are considered to be
- a) Autotrophs
 - b) Hyperthermophiles
 - c) Heterotrophs
 - d) Chemolithotrophs
75. A strain of *E coli* does not require vitamins when grown in a defined medium consisting of glucose, mineral salts, and ammonium chloride. This is because *E coli*
- a) Does not use vitamins for growth
 - b) Obtains vitamins from its human host
 - c) Is a chemoheterotroph
 - d) Can synthesize vitamins from the simple compounds provided in the medium
76. The selective medium used to promote the growth of lactobacilli is
- a) CLED agar
 - b) Tomato juice agar
 - c) Blood agar
 - d) Peptone
77. ONE of the following aerobic gram-positive bacilli is a modified acid-fast positive organism
- a) *Nocardia brasiliensis*
 - b) *Lactobacillus acidophilus*
 - c) *Erysipelothrix rhusiopathiae*
 - d) *Listeria monocytogenes*
78. A group of teenagers became ill with nausea, vomiting, severe abdominal cramps, and diarrhea after eating undercooked hamburgers from a local restaurant. Two of the teenagers were hospitalized with hemolytic-uremic syndrome. *Escherichia coli* O157:H7 was isolated from the patient's stools as well as from uncooked hamburgers. The H7 refers to which bacterial antigen?
- a) Lipopolysaccharide
 - b) Capsular
 - c) Flagellar
 - d) Fimbrial
79. ONE of the following is NOT an important infection control strategy in containing spread of Methicillin resistant *Staphylococcus aureus* in hospitals
- a) Aggressive hand hygiene
 - b) Routine surveillance for nasal colonization among high-risk individuals
 - c) Contact isolation for patients who are colonized or infected with MRSA
 - d) Routine antimicrobial prophylaxis for all patients hospitalized for more than 48 hours

80. Enterococci can be distinguished from non enterococcal group D streptococci on the basis of
- a) γ -Hemolysis
 - b) Esculin hydrolysis
 - c) Growth in 6.5% NaCl
 - d) Growth in the presence of bile
81. ONE of the following organisms is not a rapidly growing mycobacterium
- a) *Mycobacterium fortuitum*
 - b) *Mycobacterium abscessus*
 - c) *Mycobacterium mucogenicum*
 - d) *Mycobacterium nonchromogenicum*
82. Non treponemal serological tests
- a) Are useful in definitively identifying a *Treponema pallidum* infection
 - b) Measure antibodies against *Treponema pallidum*
 - c) Can be used to monitor antibiotic treatment of primary or secondary syphilis
 - d) Measure antibodies against lipids released from damaged cells
83. ONE of the following organisms principally infects the liver and kidneys
- a) *Leptospira interrogans*
 - b) *Staphylococcus aureus*
 - c) *Escherichia coli*
 - d) *Enterococcus faecalis*
84. Initiation of infection by *Mycoplasma pneumoniae* begins with
- a) Elaboration of a polysaccharide capsule that inhibits phagocytosis
 - b) Secretion of a potent exotoxin
 - c) Endocytosis by ciliated respiratory epithelial cells
 - d) Adherence to respiratory epithelial cells mediated by P1 adhesin
85. ONE of the following drugs should not be used to treat Rocky Mountain spotted fever
- a) Trimethoprim-sulfamethoxazole
 - b) Chloramphenicol
 - c) Doxycycline
 - d) Penicillin
86. The recommended treatment for Q-fever endocarditis is
- a) Emergency surgery
 - b) Levofloxacin monotherapy for 6 weeks
 - c) 18 months of combination therapy with doxycycline and hydroxychloroquine
 - d) Penicillin and gentamicin combination therapy using IgG titers to determine duration

87. ONE of the following statements about trachoma is NOT correct
- a) It follows chronic or recurrent eye infection with *Chlamydia trachomatis*.
 - b) Millions of people worldwide have trachoma.
 - c) Trachoma is readily prevented by a chlamydial vaccine.
 - d) Progression of trachoma can be slowed by intermittent treatment with azithromycin.
88. A healthy individual acquires a new strain of *Escherichia coli* in his gastrointestinal tract and does not fall ill. A second person with an acute leukemia and low white blood cells acquires the same organism, develops diarrhea followed by bacteremia, sepsis, and death. This organism is:
- a) Normal flora for both individuals
 - b) A pathogen for both individuals
 - c) An opportunistic pathogen for both individuals
 - d) One with low virulence
89. A 70-year-old man with a long history of smoking presents with a fever and a productive cough of greenish sputum. A chest X-ray confirms pneumonia. A Gram stain of the sputum reveals very small gram-negative rods with no growth on blood agar, but colonies do grow on chocolate agar. One of the following bacteria is the MOST likely cause:
- a) *Chlamydia pneumoniae*
 - b) *Legionella pneumophila*
 - c) *Mycoplasma pneumoniae*
 - d) *Haemophilus influenzae*
90. Laboratory diagnosis of pneumonic plague is based on
- a) Urine culture
 - b) Stool culture
 - c) Sputum culture
 - d) Wound swab culture
91. Invasion of and intracellular growth in the epithelial cells lining the intestine is a characteristic of
- a) *Vibrio cholerae*
 - b) *Shigella dysenteriae*
 - c) *Salmonella typhi*
 - d) Enteroaggregative *Escherichia coli*
92. A young man develops peritonitis following abdominal trauma. During surgery foul smelling purulent material is aspirated from the infected area. Gram stain of this material contains a mixture of Gram-positive cocci, Gram- positive rods and many Gram-negative rods. The organism that is likely to represent majority of the Gram-negative rods is
- a) *Yersinia enterocolitica*
 - b) *Fusobacterium necrophorum*
 - c) *Bacteroides fragilis*
 - d) *Yersinia pseudotuberculosis*

93. A 25-year-old man has high fever and elevated white blood cell count. Blood cultures are obtained and is treated with a broad-spectrum cephalosporin plus an aminoglycoside. Laboratory reports that blood cultures contain catalase positive Gram-positive cocci clusters and antibiotic sensitivity are underway. Pending arrival of results, the cephalosporin is replaced with vancomycin. The rationale for this change is
- a) Cephalosporins have a narrower spectrum of action than vancomycin
 - b) The lab results suggest Staphylococci, many of which are resistant to broad spectrum cephalosporins
 - c) Lysis of bacteria by cephalosporins may result in a massive inflammatory reaction
 - d) Vancomycin is a bactericidal antibiotic whereas cephalosporins are only bacteriostatic
94. The essential process in *Staphylococcus aureus* that is inhibited by Erythromycin is
- a) Methylation of ribosomal RNA
 - b) Cross-linking of peptidoglycan chains by transpeptidases
 - c) Peptide bond formation by bacterial ribosomes
 - d) Enzymatic activity of dihydrofolate reductase
95. A 45-year-old woman is admitted to the hospital with acute chest pain. On the second hospital day she had a myocardial infarction and unfortunately also develops acute diarrhea. A stool culture grows Salmonella. This infection is
- a) Nosocomial
 - b) Coincidental
 - c) Iatrogenic
 - d) Community acquired
96. The most prevalent type of fungal infections worldwide is
- a) Dermatophytoses
 - b) Histoplasmosis
 - c) Cryptococcosis
 - d) Candidiasis
97. One of the following is not an example of superficial fungal infections
- a) Pityriasis versicolor
 - b) Seborrheic dermatitis
 - c) Malassezia folliculitis
 - d) Mycetoma
98. Transmission of ringworm is most often associated with
- a) Intravenous drug abuse
 - b) Inhalation of dermatophytes from contaminated bird feces
 - c) Fecal-oral transmission
 - d) Adherence of dermatophyte to moist skin

99. A woman who pricked her finger while pruning some rose bushes develops a local pustule that progresses to become an ulcer. Several nodules then develop along the local lymphatic drainage of the pricked site. The most likely aetiology of the ulcer and nodules is
- a) *Aspergillus fumigatus*
 - b) *Candida albicans*
 - c) *Cryptococcus neoformans*
 - d) *Sporothrix schenckii*
100. 10% Potassium hydroxide (KOH) is used in direct microscopic examination of specimens because it
- a) Digests the host's tissues
 - b) Disinfects the specimen to protect the technician
 - c) Stains fungal elements and enhances contrast
 - d) Prevents drying of the specimen