

ENTRANCE EXAMINATION FOR ADMISSION, MAY 2012.

M.Sc. (MEDICAL MICROBIOLOGY)

COURSE CODE : 503

Register Number :

Signature of the Invigilator
(with date)

COURSE CODE : 503

Time : 2 Hours

Max : 400 Marks

Instructions to Candidates :

1. Write your Register Number within the box provided on the top of this page and fill in the page 1 of the answer sheet using pen.
2. Do not write your name anywhere in this booklet or answer sheet. Violation of this entails disqualification.
3. Read each of the question carefully and shade the relevant answer (A) or (B) or (C) or (D) in the relevant box of the ANSWER SHEET using HB pencil.
4. Avoid blind guessing. A wrong answer will fetch you -1 mark and the correct answer will fetch 4 marks.
5. Do not write anything in the question paper. Use the white sheets attached at the end for rough works.
6. Do not open the question paper until the start signal is given.
7. Do not attempt to answer after stop signal is given. Any such attempt will disqualify your candidature.
8. On stop signal, keep the question paper and the answer sheet on your table and wait for the invigilator to collect them.
9. Use of Calculators, Tables, etc. are prohibited.

1. A 4th year medical student from the U of U traveled to Northern Ghana during an international rotation to Accra. He was fortunate enough to see a patient with *Dracunculus medinensis* in which they were extracting a worm from his leg onto a pencil. This parasite is being eradicated from the world. Which of the following is least likely to help rid the world of *Dracunculus medinensis*?
 - (A) Boiling surface water before drinking it
 - (B) Using a coffee filter or shirt to filter out copepods before drinking surface water
 - (C) Treating of sewage before it enters fresh surface water
 - (D) Preventing persons suspected of having *Dracunculus* from wading in the drinking water

2. A 74-year old World War II Veteran who was a prisoner of war in the Philippines is admitted to the VAH with a Group A Streptococcal cellulitis resulting from massive swelling of both lower legs from elephantiasis. Which of the following is false regarding elephantiasis caused by *Wuchereria bancrofti*?
 - (A) If these infections are not treated early they rapidly progress to massive swelling of the involved lymphatic drainage area
 - (B) It is transmitted to humans by the mosquito
 - (C) Humans are the definitive host
 - (D) The microfilaria in the blood stream of man can be transfused to another person without establishing a new infection

3. An ophthalmologist from Cameroon, Africa describes the microfilaria seen in the eye of patients with Onchocerciasis. He states that he treats only after finding 30+ microfilaria because of the toxicity of Diethyl-Carbamazine that was used for treatment. Now with a less toxic agent, (Ivermectin) a major attempt is being made to eradicate *Onchocerca volvulus*. Which statement is false regarding *Onchocerca volvulus*?
 - (A) It is transmitted by the Simulian Black fly that reproduces in rapidly moving water
 - (B) Itching of the skin is a prominent feature of this disease
 - (C) The adults live in a nodule on the skin with the female producing large numbers of microfilaria that migrate under the skin
 - (D) The microfilaria mate in the human skin and develop into the adult parasite

4. Itching around the rectum is commonly caused by the pinworm, *Enterobius vermicularis*. Which of the following is false regarding pinworms?
 - (A) It has a simple rectum to mouth life cycle (do not scratch your bum and suck your thumb)
 - (B) Diagnosis is best made by a stool O&P exam
 - (C) It is highly contagious infecting a number of members of a family at the same time
 - (D) Spread can be prevented by good hygiene

5. *Trichuris trichiura* or whipworm is a frequent parasite found in humans. Which of the following is false for *Trichuris trichiura*?
- (A) Heavy infestations may result in diarrhea sometimes associated with blood
 - (B) Light infections may be asymptomatic
 - (C) The eggs have a barrel-like appearance with bipolar plugs
 - (D) After ingestion the eggs hatch into larvae that migrate through the lung before maturing in the duodenum
6. In the 1920's, the Rockefeller Foundation funded a physician to go throughout the Pacific Islands to decrease the incidence of hookworm. Each of the following but one would help decrease the incidence of this disease. Which one would not make any change in incidence of *Ancylostoma duodenale* or *Necator americanus*?
- (A) Wearing shoes
 - (B) Washing hands after using the bathroom
 - (C) Using latrines for defecation
 - (D) Treating those found to be infected
7. An elderly Tongan male was diagnosed with multiple myeloma (a form of cancer) and has been treated with chemotherapy agents for two months. He was then admitted to the hospital with new-onset asthma symptoms that became worse when he was treated with steroids. Many small larvae were found in his sputum and he was found to have a hyper-infection with *Strongyloides stercoralis*. Which statement is false regarding *Strongyloides*?
- (A) *Strongyloides* is a common cause of iron deficiency anemia just like hookworm
 - (B) The initial infection occurs when larvae penetrate the skin from the soil
 - (C) Auto infection occurs when the ova hatch and mature in the intestinal tract and then penetrate the intestine to establish a persistent infection
 - (D) Eosinophilia is present during the migrating phase of the life cycle
8. A physician calls from an outlying hospital to report that his patient has passed a large, white, round worm with pointed ends that is about 8 inches long. He is concerned this could be *Echinococcus* but the only parasite that matches this description is *Ascaris lumbricoides*. Which of the following is false regarding *Ascaris lumbricoides*?
- (A) Most infected humans are asymptomatic
 - (B) Large numbers of larvae passing through the lung can cause asthma type symptoms
 - (C) Large numbers of adult worms in the gut can cause obstruction
 - (D) Heavy infection has been associated with rectal prolapsed

9. Humans are the definitive host for *Diphyllobothrium latum* or the fish tapeworm which competes for Vitamin B12 with its human host. Vitamin B12 deficiency can result in an anemia with production of very large red blood cells, called macrocytic anemia. All of the following would prevent the spread of this disease but one. Which one would not be a method of prevention?
- (A) Avoid swimming in fresh waters that are endemic for *Diphyllobothrium latum*
 - (B) Cook freshwater fish well before eating
 - (C) Freeze fish that is going to be consumed raw which will kill the parasite
 - (D) Avoid eating fresh water fish
10. *Taenia saginata* and *Taenia solium* are similar in many ways, but *Taenia solium* is more dangerous. Which of the following makes *T. solium* more dangerous?
- (A) It has an armed scolex
 - (B) It has fewer uterine branches than *T. saginata*
 - (C) Man can be infected as an intermediate host by eating the eggs from *T. solium*
 - (D) It produces more eggs than *T. saginata*
11. A 22-year old Tibetan female is found to have a large multiloculated cyst of the pelvis that is removed and found to be due to *Echinococcus granulosus*. This is most unusual since most cysts occur in the liver or lung. Which of the following is false regarding *Echinococcus granulosus*?
- (A) The diagnosis in humans can be made by looking for the eggs in human stool
 - (B) Dogs are the definitive host
 - (C) Sheep are intermediate hosts
 - (D) Humans are incidental hosts
12. A student returns from a student teaching assignment in Zimbabwe. On the way home she swam in Lake Malawi. She is found to have schistosomiasis. Four of the following answers are good advice on how to prevent schistosomiasis. Which one is bad advice?
- (A) In risk areas, don't swim in fresh water rivers or lakes
 - (B) Swimming in chlorinated pools is safe
 - (C) Swimming in ocean salt water is safe
 - (D) Wading in water up to your knees is safe for brief periods of time
13. A Chinese male has had right upper quadrant pain for the past 10 years. Workup for gallbladder disease with an ultrasound shows small linear organisms. O&P exam reveals the ovoid, flask shaped egg of *Clonorchis sinensis*. Which of the following statements is false regarding *Clonorchis sinensis*?
- (A) It is also called the oriental liver fluke
 - (B) Man is a definitive host
 - (C) This infection can best be treated with surgical removal of the gallbladder
 - (D) There are two intermediate hosts - the snail and the fish

14. The major groups of arthropod-borne viruses include
- (A) Togaviruses, Flaviviruses, and Bunyaviruses
 - (B) Togaviruses, Rhabdoviruses, Reoviruses
 - (C) Reoviruses, Enteroviruses, Rhabdoviruses
 - (D) Retroviruses, Enteroviruses, Togaviruses
15. The major pathological features in Yellow Fever include
- (A) Midzonal hepatic necrosis and Councilman bodies
 - (B) Midzonal hepatic necrosis and Negri bodies
 - (C) Glomerular and renal papillary necrosis
 - (D) Midzonal hepatic necrosis and diffuse encephalitis
16. The pathogenesis of dengue hemorrhagic shock syndrome is distinguished from that of uncomplicated dengue by
- (A) Excitotoxic injury of neurons
 - (B) Development of dengue virus meningitis
 - (C) Immune enhancement of infection
 - (D) Neurotropic spread of virus
17. Rabies reaches the central nervous system by
- (A) Hematogenous distribution
 - (B) Neurotropic spread
 - (C) Entry into brain within macrophages
 - (D) Both (A) and (B)
18. Creutzfeldt-Jakob disease is caused by
- (A) JC virus
 - (B) Pumuula virus
 - (C) Prions
 - (D) SV40 virus
19. Rabies virus produces infection of
- (A) Astrocytes
 - (B) Oligodendrocytes
 - (C) Neurons
 - (D) Macrophages
20. The most frequent cause of viral meningitis in the United States is
- (A) Enteroviruses
 - (B) Rhabdoviruses
 - (C) California/Lacrosse virus
 - (D) Lymphocytic choriomeningitis virus

21. Common symptoms of hepatitis include:
- (A) Fever, nausea, diarrhea
 - (B) Malaise, anorexia, jaundice
 - (C) Nausea, vomiting, right upper quadrant abdominal pain
 - (D) Clear urine, dark colored stools, anorexia
22. Hepatitis A can be transmitted by:
- (A) Changing diapers on an infected baby
 - (B) Having sex with someone who is infected
 - (C) Eating cooked meat
 - (D) Needle stick injuries from infected patients
23. A 30 year old patient comes in with symptoms of hepatitis. The following serological results are obtained: Hepatitis A IgM antibody negative, Hepatitis A IgG antibody positive, Hepatitis B surface antigen positive, Hepatitis B surface antibody negative, Hepatitis C antibody negative. This set of results suggests that the patient has acute:
- (A) Hepatitis A
 - (B) Hepatitis B
 - (C) Hepatitis C
 - (D) Hepatitis A and B
24. A major characteristic of hepatitis C is:
- (A) It is transmitted by eating raw oysters
 - (B) It is highly likely to cause chronic ongoing infection
 - (C) Most patients have severe symptoms when first infected
 - (D) It is a DNA virus
25. HIV is the same as:
- (A) HTLV III
 - (B) HTLV II
 - (C) HTLV I
 - (D) None of the above
26. The likelihood of HIV being transmitted from a pregnant woman to her infant in the absence of antiretroviral therapy is about:
- (A) 1 in 500
 - (B) 1 to 5 %
 - (C) 20 to 25%
 - (D) 50 to 75%
27. One of the characteristics of HIV infection is that:
- (A) The virus multiplies slowly with a half-life of weeks matching the slow rate of disease progression
 - (B) There is rapid dissemination of virus within the first few weeks of infection to all tissues
 - (C) In early infection the virus is most actively multiplying within the bloodstream
 - (D) There is little if any immune response to HIV infection, and that is why this infection is so overwhelming

28. Serologic conversion to a positive test for HIV infection occurs:
- (A) In 2-3 days
 - (B) In 3-4 weeks
 - (C) In 3-6 months
 - (D) May take up to 10 years
29. One of the key differences between amantidine/rimantidine and the newer neuraminidase inhibitor influenza virus drugs is:
- (A) drug allergy
 - (B) antimetabolic effect on host cells due to lack of specificity for viral enzymes
 - (C) rate of development of drug resistance
 - (D) drug-drug interactions associated with competition for cytochrome P450 enzymes
30. Which of the following best characterizes antiviral chemotherapy in comparison to bacterial chemotherapy?
- (A) Few drug targets, toxicity problematic
 - (B) Sensitivity tests of limited value
 - (C) Toxicity a minor problem, multiple enzymatic targets
 - (D) Many more drug options are available to treat viral infections
31. HIV reverse transcriptase, a critical target in modern antiretroviral chemotherapy, performs which critical function for the virus:
- (A) Cleaves polyprotein precursor leading to functional assembly of viral core
 - (B) Cleaves sialic acid residue from glycoprotein permitting attachment and entry into cell
 - (C) Transcribes RNA into DNA
 - (D) Activates 2',5' oligoadenylate synthetase
32. Foscarnet interacts with which of the following viral enzymes:
- (A) Pyrophosphate-binding site of the polymerase
 - (B) Protease
 - (C) Nucleoside reductase
 - (D) Reverse transcriptase
33. Enteroviruses are most closely related to which of the following viruses?
- (A) Herpes simplex
 - (B) Hepatitis C
 - (C) Hepatitis A
 - (D) Rotavirus

34. The following statements are clearly true about enteroviruses EXCEPT:
- (A) There are many serotypes
 - (B) They can cause a variety of diseases which imitate bacterial infection
 - (C) They are an important cause of meningitis
 - (D) They are an important cause of diarrhea
35. All of the following are syndromes associated with enteroviruses EXCEPT:
- (A) Conjunctivitis
 - (B) Coronary artery disease
 - (C) Myocarditis
 - (D) Pericarditis
36. Antiviral drugs currently on the market, including acyclovir and pencyclovir are active against enteroviruses.
- (A) True
 - (B) False
 - (C) The infectious particle is called a virion
 - (D) Production of mRNA
37. All of the following are true statements regarding viruses EXCEPT:
- (A) They contain both RNA and DNA
 - (B) The nucleic acid may be single or double stranded
 - (C) They are obligate intracellular parasites
 - (D) They reproduce using host cell energy
38. A cytolytic virus would be expected to cause cytopathic effect in cell culture.
- (A) True
 - (B) False
39. Influenza virus hemagglutinins play a significant role in which of the following phases of viral replication?
- (A) Uncoating
 - (B) Virion Assembly
 - (C) Release by budding
 - (D) Adsorption
40. Which of the following diseases are not transmitted by Ticks?
- (A) Ulceroglandular Tularemia
 - (B) Bubonic Plague
 - (C) Relapsing Fever
 - (D) Lyme Disease
41. Infection caused by Anaerobes are
- (A) Usually confined to the Abdomen
 - (B) Never seen in Lungs
 - (C) Mixed
 - (D) Rapidly Progressive

42. Microbes were first observe over
 (A) 300 years ago (B) 100 years ago
 (C) 200 years ago (D) None
43. The single most characteristic of Diarrhea caused by Vibrio Cholera is
 (A) Profound watery Diarrhea (B) Severe abdominal pain
 (C) Massive Bloody Diarrhea (D) Both (B) & (C)
44. Bacteria and other microorganism were first observed by
 (A) Louis Pasteur (B) Antonie Van Leeuwenhoek
 (C) Robert Koch (D) None
45. Who designed the method of food preservation?
 (A) Robert Koch (B) Louis Pasteur
 (C) Both (A) & (B) (D) None
46. Who designed the method of vaccine against several diseases such as anthrax,food cholera and rabies?
 (A) Robert Hooke (B) Louis Pasteur
 (C) Girolamo Fracastoro (D) None
47. The normal habitats of non fermentative bacteria include the following except
 (A) Contact lens Solutions (B) Hospital Water Sources
 (C) Houses Plants (D) Reptiles
48. The most common pathogens responsible for nosocomial pneumonias in the ICU are:
 (A) Gram positive organisms (B) Gram negative organisms
 (C) Mycoplasma (D) Virus infections
49. The most common organism amongst the following that causes acute meningitis in an AIDS patients is:
 (A) Streptococcus pneumonia (B) Streptococcus agalactiae
 (C) Cryptococcus neoformans (D) Listeria monocytogenes
50. All of the following organisms are known to survive intracellularly except:
 (A) Neisseria meningitides (B) Salmonella typhi
 (C) Streptococcus pyogenes (D) Legionella pneumophila

51. The following statements are true regarding melioidosis except:
- (A) It is caused by *Burkholderia mallei*
 - (B) The agent is a gram negative aerobic bacteria
 - (C) Bipolar staining of the aetiological agent is seen with methylene blue stain
 - (D) The most common form of melioidosis is pulmonary infection
52. A child was diagnosed to be suffering from diarrhoea due to *Compylobacter jejuni*. Which of the following will be the correct environmental conditions of incubation of the culture plates of the stool sample?
- (A) Temperature of 42°C and microaerophilic
 - (B) Temperature of 42°C and 10% carbon dioxide
 - (C) Temperature of 37°C and microaerophilic
 - (D) Temperature of 37°C and 10% carbon dioxide
53. A bacterial disease that has been associated with the 3 "Rs" i.e., rats, ricefields, and rainfall is:
- (A) Leptospirosis
 - (B) Plague
 - (C) Melioidosis
 - (D) Rodent bite fever
54. With reference to infections with *Escherichia coli* the following are true except:
- (A) Enteroaggregative *E. coli* is associated with Persistent diarrhea
 - (B) Enterohemorrhagic *E. coli* can cause haemolytic uraemic syndrome
 - (C) Enteroinvasive *E. coli* produces a disease similar to salmonellosis
 - (D) Enterotoxigenic *E. coli* is a common cause of travelers' diarrhea
55. The following statements are true regarding *Clostridium perfringens* except:
- (A) It is the commonest cause of gas gangrene
 - (B) It is normally present in human faeces
 - (C) The principal toxin of *C. perfringens* is the alpha toxin
 - (D) Gas gangrene producing strains of *C. perfringens* produce heat resistant spores
56. All of the following *Vibrio* sp. are halophilic, except:
- (A) *V. cholera*
 - (B) *V. parahaemolyticus*
 - (C) *V. alginolyticus*
 - (D) *V. fluvialis*
57. In the small intestine, cholera toxin acts by:
- (A) ADP-ribosylation of the G regulatory protein
 - (B) Inhibition of adenyl cyclase
 - (C) Activation of GTPase
 - (D) Active absorption of NaCl

58. To make a vaccine against chicken cholera that would not kill the chicken, Pasteur
- (A) Treated the sample with heat to kill the microorganisms.
 - (B) Attenuated the strain by repeatedly passaging it in culture.
 - (C) Used a related but different microorganism from animals.
 - (D) Used very small, non-lethal amounts of material.
59. When Louis Pasteur first tried his vaccine on a young boy, there was a possibility that the vaccine itself could kill the child. This was permissible under the standards of the day because
- (A) The importance of the Science was worth the risk.
 - (B) Less value was placed on human life than today.
 - (C) The child was from a poor family.
 - (D) The child had rabies, which was always fatal.
60. Agostino Bassi first showed that a disease, in silkworms, was caused by microorganism. What kind of microorganism caused the disease?
- (A) Virus
 - (B) Bacterium
 - (C) Fungus
 - (D) Protozoan
61. What was the first bacterium shown to cause human disease?
- (A) Anthrax
 - (B) Mycobacterium
 - (C) Diphtheria
 - (D) Streptococcus
62. What was the first virus shown to cause disease?
- (A) Polio
 - (B) Hepatitis
 - (C) Tobacco mosaic virus
 - (D) Potato blight
63. The primary use of Koch's postulates is to
- (A) Clearly identify and characterize a particular microorganism.
 - (B) Isolate microorganisms from diseased animals.
 - (C) Demonstrate that a disease is caused by a microorganism.
 - (D) Develop vaccines for specific diseases.
64. Which of the following is NOT part of Koch's postulates?
- (A) The microorganism is never found in healthy animals.
 - (B) The microorganisms is always found in diseased animals.
 - (C) The microorganism must cause disease in healthy animals.
 - (D) The microorganism must secrete a toxin in culture.

65. The role of antibodies in fighting disease was first demonstrated by:
- (A) Vaccination of humans with rabies.
 - (B) Injection of rabbit "antitoxin" to protect against diphtheria.
 - (C) Attenuation of rabies by passage in atypical host.
 - (D) Observation of phagocytosis of bacteria.
66. The role of blood cells in fighting disease was first demonstrated by
- (A) Pasteur with his swan necked flasks.
 - (B) Koch with acid fast staining of mycobacteria.
 - (C) Metchnikoff with his observation of phagocytosis.
 - (D) Chamberland with his filtration of virus through porcelain.
67. The first observation that bacteria-like organisms could be found in normal air was by
- (A) Anton Leeuwenhoek
 - (B) Louis Pasteur
 - (C) Robert Koch
 - (D) Joseph Meister
68. The first physician to make practical application of the germ theory of disease to surgery was
- (A) Louis Pasteur
 - (B) Robert Koch
 - (C) Joseph Lister
 - (D) Edward Jenner
69. Louis Pasteur's studies on the unwanted production of acid from beet sugar was the first demonstration that
- (A) Sugars are unstable and can breakdown into either ethanol or acid.
 - (B) Bacteria can cause specific chemical reactions.
 - (C) Ethanol is unstable and can convert to acid.
 - (D) Microorganisms can be found in air.
70. Which of the following discoveries is NOT attributed to Sergei Winogradsky?
- (A) Colony isolation on solid phase medium.
 - (B) Colony enrichment on selective medium.
 - (C) Bacteria oxidation of iron and sulfur to obtain energy.
 - (D) CO₂ fixation by non-photosynthetic microorganisms.
71. The capsule of *Cryptococcus neoformans* in a CSF sample is best seen by:
- (A) Gram stain
 - (B) India ink preparation
 - (C) Giemsa stain
 - (D) Methanamine-Silver stain
72. Which of the following infestation leads to malabsorption?
- (A) *Giardia lamblia*
 - (B) *Ascaris lumbricoides*
 - (C) *Necator americanus*
 - (D) *Ancylostoma duodenale*

73. Which of the following is not a neuroparasite?
(A) *Taenia solium* (B) *Acanthamoeba*
(C) *Naegleria* (D) *Trichinella spiralis*
74. HIV can be detected and confirmed by:
(A) Polymerase Chain Reaction (PCR)
(B) Reverse Transcriptase PCR
(C) Real Time PCR
(D) Mimic PCR
75. Virus mediated transfer of host DNA from one cell to another is known as:
(A) Transduction (B) Transformation
(C) Transcription (D) Integration
76. Viruses can be isolated from clinical samples by cultivation in the following except:
(A) Tissue culture (B) Embryonated eggs
(C) Animals (D) Chemically defined media
77. Which one of the following statements is true regarding *Chlamydia pneumoniae*?
(A) Fifteen serovars have been identified as human pathogens
(B) Mode of transmission is by the airborne bird excreta
(C) The Cytoplasmic inclusions present in the sputum specimen are rich in glycogen
(D) The group specific antigen is responsible for the production of complement fixing antibodies
78. *Chlamydia trachomatis* is associated with the following except:
(A) Endemic trachoma
(B) Inclusion conjunctivitis
(C) Lymphogranuloma venereum
(D) Community acquired pneumonia
79. It is true regarding the normal microbial flora present on the skin and mucous membranes that:
(A) It cannot be eradicated by antimicrobial agents
(B) It is absent in the stomach due to the acidic pH
(C) It establishes in the body only after the neonatal period
(D) The flora in the small bronchi is similar to that of the Trachea

80. A farmer presenting with fever off-and on for the past 4 years was diagnosed to be suffering from chronic brucellosis. All of the following serological tests would be helpful in the diagnosis at this state except:
- (A) Standard Agglutination test
 - (B) 2 Mercapto-ethanol test
 - (C) Complement fixation test
 - (D) Coomb' s test
81. A man, after skinning a dead animal, developed a pustule on his hand. A smear prepared from the lesion showed the presence of Gram positive bacilli in long chains which were positive for McFadyean's reaction. The most likely aetiological agent is :
- (A) Clostridium tetani
 - (B) Listeria monocytogenes
 - (C) Bacillus anthracis
 - (D) Actinomyces sp.
82. Toxins are implicated as the major pathogenetic mechanism in all of the following bacterial diarrhoeas except
- (A) Vibrio cholera
 - (B) Shigella sp.
 - (C) Vibrio parahaemolyticus
 - (D) Staphylococcus aureus
83. A microbiologist wants to develop a vaccine for prevention of attachment of diarrhoeagenic E. coli to the specific receptors in the gastro-intestinal tract. All of the following fimbrial adhesions would be appropriate vaccine candidates except :
- (A) CFA-I
 - (B) P-Pili
 - (C) CS-2
 - (D) K 88
84. Which of the following toxins acts by inhibiting protein synthesis?
- (A) Cholera toxin
 - (B) Shiga toxin
 - (C) Pertussis toxin
 - (D) LT of enterotoxigenic E.coli
85. Which of the following statements is true about haptent?
- (A) It induces brisk immune response
 - (B) It needs carrier to induce immune response
 - (C) It is a T-independent Antigen
 - (D) It has no association with MHC
86. Adenosine deaminase (enzyme) deficiency is associated with:
- (A) Severe combined immunodeficiency (SCID)
 - (B) X-linked agammaglobulinemia
 - (C) Transient hypogammaglobulinemia of infancy
 - (D) Chronic granulomatous disease

87. A woman with infertility receives an ovary transplant from her sister who is an identical Twin. What type of graft it is?
 (A) Xenograft (B) Autograft
 (C) Allograft (D) Isograft
88. Type I hypersensitivity is mediated by which of the following immunoglobulins?
 (A) IgA (B) IgG
 (C) IgM (D) IgE
89. The serum concentration of which of the following human IgG subclass is maximum?
 (A) IgG1 (B) IgG2
 (C) IgG3 (D) IgG4
90. False about pneumococcus is
 (A) Capsule aids in virulence
 (B) Commonest cause of otitis media and pneumonia
 (C) Meningitis caused by it is milder than by other organisms
 (D) Bile sensitive
91. Which of the following statements is true regarding ARBO viruses?
 (A) Yellow fever is endemic in India
 (B) Dengue virus has only one serotype
 (C) Kyasanur Forest disease (KFD) is transmitted by ticks
 (D) Mosquito of culex vishnui complex is the vector of Dengue fever
92. All of the following clinical features are associated with Enteroviruses except :
 (A) Myocarditis (B) Pleurodynia
 (C) Herpangina (D) Hemorrhagic fever
93. All of the following statements are true regarding poliovirus except :
 (A) It is transmitted by feco-oral route
 (B) Asymptomatic infections are common in children
 (C) There is a single serotype causing infection
 (D) Live attenuated vaccine produces herd immunity
94. Laboratory diagnosis of viral respiratory tract infections can be established by all of the following tests except :
 (A) Detection of virus specific IgM antibodies in single serum specimen
 (B) Demonstration of viral antigens by indirect immunofluorescence assay in nasopharyngeal washings
 (C) Isolation of viruses using centrifugation enhanced culture
 (D) Detection of viral hemagglutination inhibiting (HAI) antibodies in a single serum specimen

95. Epstein Barr (EB) virus has been implicated in the following malignancies except:
(A) Hodgkin's disease (B) Non Hodgkin's lymphoma
(C) Nasopharyngeal carcinoma (D) Multiple myeloma
96. The most sensitive method for detecting cervical *Chlamydia trachomatis* infection is:
(A) Direct fluorescent antibody test
(B) Enzyme immunoassay
(C) Polymerase chain reaction
(D) Culture on irradiated McConkey cells
97. A 20 years old male patient presents to the STD clinic with a genital ulcer. The gram stain of the smear from ulcer shows gram negative coccobacilli. The most appropriate media for culture would be:
(A) Thayer Martin Medium
(B) Blood agar with X & V factors
(C) Chocolate agar with IsoVitaleX
(D) Teiturite blood agar
98. A 30 year old woman with a bad obstetric history presents with fever. The blood culture from the patient grows gram-positive small to medium coccobacilli that are pleomorphic, occurring in short chains. Direct wet mount from the culture shows tumbling motility. The most likely organism is:
(A) *Listeria monocytogenes* (B) *Corynebacterium* sp.
(C) *Enterococcus* sp. (D) *Erysipelothrix rhusiopathiae*
99. Regarding gas gangrene one of the following is correct:
(A) It is due to *Clostridium Botulinum* infection
(B) Clostridial species are gram-negative spore forming anaerobes
(C) The clinical features are due to the release of protein endotoxin
(D) Gas is invariably present in the muscle compartments
100. All can cause pulmonary eosinophilia except:-
(A) *Necator americanus* (B) *Ankylostoma duodenale*
(C) *Trichinella spiralis* (D) *Ascaris lumbricoides*