

ENTRANCE EXAMINATION FOR ADMISSION, MAY 2013.

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. Regarding NK cells, false statement is
 - (A) It is activated by IL-2
 - (B) Expresses CD3 receptor
 - (C) It is a variant of large lymphocyte
 - (D) There is antibody induced proliferation of NK cells

2. Adenosine deaminase deficiency is seen in the following
 - (A) Common variable immunodeficiency
 - (B) Severe combined immunodeficiency
 - (C) Chronic granulomatous disease
 - (D) Nezelof syndrome

3. A beta hemolytic bacteria; is resistant to vancomycin shows growth in 6.5% NaCl, is non bile sensitive; it is likely to be
 - (A) *Strep. agalactiae*
 - (B) *Strep. pneumoniae*
 - (C) *Enterococcus*
 - (D) *Strep. bovis*

4. All are about streptococcus except
 - (A) M protein is responsible for production for mucoid colonies
 - (B) M protein is responsible for virulence
 - (C) Mucoid colonies are virulent
 - (D) No resistance to penicillin has been reported

5. Toxin involved in the streptococcal toxic shock syndrome is
 - (A) Pyrogenic toxin
 - (B) Erythrogenic toxin
 - (C) Hemolysin
 - (D) Neurotoxin

6. A child presents with a white patch over the tonsils: diagnosis is best made by culture in
 - (A) Loeffler medium
 - (B) LJ medium
 - (C) Blood agar
 - (D) Tellurite medium

7. A pt with 14 days of fever is suspected of having typhoid; what investigation should be done
 - (A) Blood culture
 - (B) Widal
 - (C) Stool culture
 - (D) Urine culture

8. All are true about EHEC except: "938 HPIM"
- (A) Sereny test is positive (B) Ferments sorbitol
(C) Causes HUS (D) Elaborates shiga like exotoxin
9. An organism grown on agar shows green coloured colonies; likely organism is
- (A) Staphylococcus (B) E.Coli
(C) Pseudomonas (D) Peptostreptococcus
10. Congenital syphilis can be best diagnosed by
- (A) IgM FTAabs (B) IgG FTAabs
(C) VDRL (D) TPI
11. All are features of Ureaplasma urealyticum except
- (A) Non gonococcal urethritis (B) Salpingitis
(C) Epididymitis (D) Bacterial vaginosis
12. Regarding HIV infection, not true is
- (A) p24 is used for early diagnosis
(B) Lysis of infected CD4 cells is seen
(C) Dendritic cells do not support replication
(D) Macrophage is a reservoir for the virus
13. A pregnant woman from bihar presents with hepatic encephalopathy. The likely diagnosis
- (A) Hep. E (B) Hep. B
(C) Sepsis (D) Acute fatty liver of pregnancy
14. Virus causing hemorrhagic cystitis, diarrhea and conjunctivitis is
- (A) RSV (B) Rhinovirus
(C) Adenovirus (D) Rotavirus
15. Cystine lactose enzyme deficient medium CLED is preferred over McConkey agar in UTI because
- (A) Former prevents swarming of proteus
(B) Is a selective medium
(C) Prevents growth of pseudomonas
(D) Promotes growth of candida and staphylococcus

16. In which stage of filariasis are microfilaria seen in peripheral blood?
 (A) Tropical eosinophilia (B) Early adenolymphangitis stage
 (C) Late adenolymphangitis stage (D) Elephantiasis
17. Pancreatic Ca is caused by
 (A) Fasciola (B) Clonorchis (C) Paragonimus (D) None
18. All of the following are true except
 (A) E.coli is an aerobe and facultative anaerobe
 (B) Proteus forms uric acid stones
 (C) E.coli is motile by peritrichate flagella
 (D) Proteus causes deamination of phenylalanine to phenylpyruvic acid
19. Consumption of uncooked pork is likely to cause which of the following helminthic disease
 (A) Tinea saginata (B) Tinea solium
 (C) Hydatid cyst (D) Trichuris trichura
20. IL-2 is produced by
 (A) T cells (B) B cells (C) Monocytes (D) Neutrophils
21. In a patient of orbital cellulitis, micro organism on culture show greenish colonies and optochin sensitivity. The most likely organism is
 (A) Strep. Viridans (B) Staphylococcus
 (C) Pseudomonas (D) Pneumococcus
22. True regarding pseudomembranous colitis are all except
 (A) It is caused by clostridium difficile
 (B) The organism is a normal commensal of gut
 (C) It is due to production of phospholipase A
 (D) It is treated by vancomycin
23. E.coli gets attached to a surface with the help of
 (A) Fucose (B) Concavatin
 (C) Phytohaemagglutinin (D) Lactin

24. Chlamydia does not cause
- (A) Q-fever (B) Non gonococcal urethritis
(C) Trachoma (D) Salpingitis
25. Which is true about arboviral disease?
- (A) Yellow fever is endemic in India
(B) Dengue virus have only one serotype
(C) KFD is transmitted by ticks
(D) Japanese encephalitis is transmitted by Action
26. Rotavirus infection is diagnosed by the presence of
- (A) Antigen in stool by ELISA (B) Virus in stool
(C) Antigen in blood (D) Antibody in stool
27. A patient with sore throat has a positive Paul Bunnell test the causative organism is
- (A) EBV (B) Herpes virus
(C) Adeno virus (D) Cytomegalovirus
28. A patient presents with diarrhoea. Analysis of stool on wet mount shows mobile protozoa without RBCs and pus cells. The diagnosis is
- (A) Balantidium coli (B) Giardiasis
(C) Trichomonas hominis (D) Entamoeba histolytica
29. Latex agglutination study of the antigen in CSF helps in the diagnosis of
- (A) Cryptococcus (B) Candidiasis
(C) Aspergillosis (D) Histoplasmosis
30. A company executive, who travels world-wide, presents with upper abdominal mass and +ve casoni's test. The organism is
- (A) Echinococcus (B) Entamoeba histolytica
(C) Hepatitis (D) Ascariasis
31. Pulmonary eosinophilia is seen in the following parasitic infections except
- (A) Babesiosis (B) Hook worm infection
(C) Strongyloidiasis (D) Visceral larva migrans

32. A child from Bihar comes with fever, Blood examination shows sheathed microfilaria with nuclei upto tail tip. The diagnosis is
- (A) B.malayi (B) W.bancrofti
(C) Loa loa (D) Oncoerca volvulus
33. Autoinfection is a mode of transmission in
- (A) Trichinella (B) Cyticeriosis (C) Ancylostoma (D) Ascaris
34. Pigs are reservoir for
- (A) T.Solium (B) T.Saginata
(C) Trichinella spiralis (D) Ancylostoma
35. Prokaryotes are characterized by
- (A) Absence of nuclear membrane
(B) Presence of microvillie on its surface
(C) Presence of smooth endoplasmic reticulum
(D) All of the above
36. Which of the following immunoglobulins can crosses placenta?
- (A) IgA (B) IgM (C) IgG (D) IgD
37. Type of graft, best suited for renal transplantation
- (A) Allograft (B) Autograft (C) Xenograft (D) Isograft
38. True statement regarding non-coagulase staphylococci is
- (A) They are non-pathogenic
(B) They commonly infect indwelling prosthesis
(C) They may cause scarlet fever
(D) They are seperated by gram staining
39. True statement regarding Pneumococcus is
- (A) Virulence is due to polysaccharide capsule
(B) Capsule is protein in nature
(C) Antibodies against capsule are not protective
(D) Resistance to antibodies has not yet been reported

40. True statement about diphtheria toxin is
- (A) Phage toxin is mediated
 - (B) Toxin is required for local infection
 - (C) Endotoxaemia causes systemic manifestation
 - (D) Toxin Acts by inhibiting synthesis of capsule
41. Most common organism responsible for gas gangrene is
- (A) Clostridium-perfringens
 - (B) Clostridiumodifficile
 - (C) Clostridium tetani
 - (D) Clostridium septicum
42. Most common organism responsible for pseudo membranous colitis is
- (A) Clostridium difficile
 - (B) Clostridium botulism
 - (C) Clostridium bifermentans
 - (D) Clostridium histolyticum
43. Which of the following statement is true about vibriocholarea?
- (A) There is no natural reservoir
 - (B) Transported in alkaline peptone water medium
 - (C) Halophilic
 - (D) Oxidase negative
44. True statement about Widal test in typhoid is
- (A) O-antigent titre remains positive for several months and reaction to it is rapid
 - (B) H-antigen titre remains positive for several months and reaction to it is rapid
 - (C) Both remain positive for several months and reaction to both is rapid
 - (D) None
45. All of the following bacteria test "Urease positive" except
- (A) E.Coli
 - (B) Proteus
 - (C) Kleibsella
 - (D) Staphylococcus
46. The statement about Influenza-A is
- (A) It has a double stranded segmented RNA
 - (B) Pandemic are caused by antigenic drift
 - (C) Nucleocapsid antibody is not specific
 - (D) Hemagglutinin and Neuraminidase is strain specific

47. Herpes-Zoster is caused by
 (A) Herpes-simplex type I (B) Herpes-simplex type II
 (C) Epstein-barr virus (D) Varicella
48. Cryptococcus-neoformans is a
 (A) Protozoa (B) Fungus (C) Parasite (D) Mycoplasma
49. Commonest parasite of CNS in India is
 (A) Schistosomiasis (B) Cysticercosis
 (C) Trichenella-spiralis (D) Hydatid cyst
50. Commonest helmithic infection in AIDS is
 (A) Trichuris trichura (B) Strongyloides stercoralis
 (C) Enterobius vermicularis (D) Nector-americana
51. Haptane is
 (A) Same as epitope
 (B) Small molecular weight protein
 (C) Requires carrier for specific antibody production
 (D) Simple haptens are precipitate
52. All of the following forces are involved in Antigen antibody reaction except
 (A) Vander Waal's forces (B) Electrostatic bond
 (C) Hydrogen bond (D) Covalent bond
53. Examples of type-I hypersensitivity is
 (A) Lepromin test (B) Tuberculin
 (C) Casoni's test (D) Arthrus reaction
54. Most common cause of chronic granulomatous disease in children is
 (A) Myeloperoxidase deficiency (B) Defective phagocytosis
 (C) Defective H₂O₂ production (D) Job's disease
55. Most common agents responsible for human bite infections are
 (A) Gram -ve bacilli (B) Gram +ve bacilli
 (C) Spirochaete (D) Anaerobic streptococci

56. True about corynebacterium diphtheria are all except
- (A) Iron is required for toxin production
 - (B) Toxin production is responsible of local reaction
 - (C) Nonsporing, noncapsular and non motile
 - (D) Toxin production is by lysogenic conversion
57. All of the following are true about bacillus anthrax except
- (A) Plasmid is responsible for toxin production
 - (B) Cutaneous anthrax generally resolve spontaneously
 - (C) Capsular polypeptide aids virulence by inhibiting phagocytosis
 - (D) Toxin is a complex of two fractions
58. Bacterial genome has been completely recognized for which one the following agents
- (A) H.Pylori
 - (B) Yersenia enterocolitis
 - (C) Compylobacter jejuni
 - (D) Streptococcus pnunonae
59. All of the following are true about helicobacter pylori except
- (A) About 50% of world population affected
 - (B) 85% of population is affected in some developing countries
 - (C) All childrens in developing countries leave immunity by five years of age
 - (D) Infection is common in low socioeconomic status
60. True about helicobacter pylori is
- (A) Culture and gram staining of biopsy is the gold standard investigation
 - (B) Controlled urea breath is negative with massive infection
 - (C) Anti urease antibody are produced only by invasive strains
 - (D) Urease activity provides protective environment to the bacilli
61. True about helicobacter pyelori are all except
- (A) Urea breath test is diagnostic
 - (B) Gram negative, flagellate bacilli
 - (C) Risk factor for development of denocarcinoma of stomach
 - (D) It provides life long immunity

62. Which of the following is an obligate parasite?
 (A) Mycoplasma (B) Chlamydia trachomatis
 (C) Gram -Ve bacilli (D) Gram +Ve cocci
63. Plaque formation in virus is done for
 (A) Isolation and typing of viruses
 (B) Cloning separation of specific viruses
 (C) Determining infectivity of virus
 (D) Accessing multiplication of virus
64. All of the following are true about Herpes group virus except
 (A) Ether sensitive
 (B) May cause malignancy
 (C) HSV II involves below diaphragm
 (D) Burkitt's lymphoma-involves-Tcells
65. Which virus reactives and involves the eye?
 (A) Herpes-zoster (B) CMV (C) E.B. virus (D) Entero-70
66. Viral enterotoxin is detected as a possible mechanism of pathogenesis in
 (A) Adeno virus (B) Rota virus (C) Calcivirus (D) Astrovirus
67. Best vaccine for rota virus infection is
 (A) Asymptomatic neonatal vaccine (B) DNA vaccine
 (C) Genetic reassortment (D) Capsular component vaccine
68. AIDS involves
 (A) T-helper cells (B) T-suppressor cells
 (C) T-cytotoxic (D) B.cells
69. Sputum examination is not useful in diagnosis of
 (A) Trichuriasis trichura (B) Ank. Duodenale
 (C) Paragonmiasis (D) Strongyloids

70. True about *Cryptococcus neoformis* is all except
(A) Anticapsular antigen is detected in C.S.F.
(B) Common in immunocompromised patient
(C) Anticapsular antibody prevents recurrence
(D) Strongly positive mucicarmine stain of the organism in tissue is diagnostic
71. Interleukin II is secreted by
(A) B lymphocytes (B) T lymphocytes
(C) Neutrophils (D) Macrophages
72. All of the following are glycoproteins except
(A) Blood antigen (B) Albumin (C) Immunoglobulin (D) HCG
73. Which of the following statements concerning immunoglobulins is wrong?
(A) IgM does not cross placenta
(B) IgE is ↑ ed in parasitic infection
(C) IgM increased in primary response
(D) Fetal infection is characterized by increase in IgG.
74. Which of the following is an example of Type IV hypersensitivity?
(A) Arthrus reaction (B) Serum sickness
(C) Schwartzmann reaction (D) Granulomatous reaction
75. Diagnosis of ABO incompatibility can be made from all of the following except
(A) Sweat (B) Saliva (C) Semen (D) C.S.F.
76. Out of the following the true statement regarding sterilization is
(A) Dry heat is the best method of sterilization of liquid paraffin
(B) All glass syringes are best sterilized by boiling at 100°C
(C) Bacterial vaccines are best sterilized by ethylene oxide
(D) Pasteurization of milk by flash method is done by heating at 63°C for 30 minutes

77. True statement about Antistreptolysin 'O' titre is
- (A) In normal people the titre is <200
 - (B) In acute glomerulonephritis the titre is low
 - (C) ASO titre >200 indicate rheumatic fever
 - (D) Streptozyme test is an active haemagglutination test
78. True statement regarding diphtheria is
- (A) It can be diagnosed by demonstration of antibodies by ELISA
 - (B) Immunization prevents carriers state
 - (C) Treatment of contacts is not indicated
 - (D) Iron has critical value in the production of toxin
79. All of the following statements about cholera are true except
- (A) O & H antigens measure carrier state
 - (B) Culture medium is TCBS Agar
 - (C) Produces indole and reduces nitrate
 - (D) Synthesize neuraminidase
80. All of the following statements are true for Elter Cholera except
- (A) Infection is mild and asymptomatic
 - (B) They are resistant to polymyxin-B unit disc
 - (C) Chronic carriers are common
 - (D) Secondary attacks rate is high in families
81. Shigella are be divided into sub group on the basis of ability to ferment
- (A) Lactose
 - (B) Maltose
 - (C) Fructose
 - (D) Mennitol
82. Which bacteria acts by inhibiting protein synthesis?
- (A) Pseudomonas
 - (B) Staphylococcus
 - (C) Steptococcus
 - (D) Klebscella
83. All of the following statements about Botulism are true except
- (A) Botulism is caused by endotoxin
 - (B) Honey ingestion causes infant botulism
 - (C) Constipation is seen
 - (D) Detection of antitoxin in the serum can aid in diagnosis

84. Acute haemorrhagic conjunctivitis is caused by
 (A) Entrovirus 70 (B) Adenovirus
 (C) Poliovirus (D) Hepadina Virus
85. True statement about rabies is
 (A) Rabies infection causes life long immunity
 (B) Rabies vaccine is always live attenuated
 (C) Rabies has various strains
 (D) Rabies is best diagnosed by immuneflorescence study
86. Most common agent causing tuberculosis in AIDS patient in tropical countries is
 (A) Mycobacterium Tuberculosis (B) Mycobacterium intracellulare
 (C) Mycobacterium parvum (D) Mycobacterium atypical
87. Epidemiological marker of Hepatitis B is
 (A) HBs Ag (B) HBe Ag
 (C) Core antigen (D) Core antibody
88. Reverse transcriptase polymerase chain reaction can aid in diagnosis of all of the following viral infections except
 (A) Adenovirus (B) Astrovirus (C) Rota virus (D) Poliovirus
89. All of the following are dimorphic fungi except
 (A) Sporotricum (B) blastomycetes (C) Histoplasma (D) Cryptococcus
90. Most common presenting symptom of thread worm infection amongst the following is
 (A) Abdominal pain (B) Rectal prolapse
 (C) Urticaria (D) Vaginitis
91. All of the following statements about toxoplasmosis are true except
 (A) Oocyst in freshly passed cat's faeces is infective
 (B) May spread by organ transplantation
 (C) Maternal infection acquired after 6 months has high risk of transmission
 (D) Arthralgia, sore throat and abdominal pain are the most common manifestations

92. *Plasmodium falciparum* infection of man is characterized by
 (A) The erythrocytes are increased in size
 (B) All stages of erythrocytic schizogony are seen in peripheral blood
 (C) Multiple infection of erythrocytes are seen
 (D) Each erythrocytic cycle lasts 72 hours
93. Differentiation of *N.gonorrhoea* and *N.meningitidis* can be done by
 (A) Glucose fermentation (B) V.P. Reaction
 (C) Maltose fermentation (D) Indole test
94. The medium used for *Mycobacterium tuberculosis* is
 (A) Sabouraud's medium (B) L J medium
 (C) Pick's medium (D) NIH medium
95. Rapid examination of Tubercle bacilli is possible with
 (A) Ziel-Nelson stain (B) Kin young stain
 (C) Auramine-Rhodamine stain (D) Giemsa stain
96. The commonest focus of Scrofuloderma is
 (A) Lung (B) Lymph node (C) Larynx (D) Skin
97. For experimental work, *Lepra* bacilli are best cultured in
 (A) Armadillos (B) Mouse food pad
 (C) guinea pigs (D) Rabbit testes
98. Which of the following is a true statement regarding *Enterobacteriaceae*?
 (A) Motility is by polar flagellum
 (B) Glucose is not fermented by all members of the family
 (C) All members are oxidase positive
 (D) Nitrate reduction negative
99. Which of the following is true about Enteropathogenic *E. coli*?
 (A) Causes diarrhea in infants
 (B) Acts by invasion of intestinal epithelial cells
 (C) Adults are mostly affected.
 (D) Affects immunocompromised host
100. Varicella are classified under
 (A) Enterovirus (B) Retrovirus (C) Poxvirus (D) Herpesvirus