

ENTRANCE EXAMINATION FOR ADMISSION, MAY 2011.

M.Phil./Ph.D. (MICROBIOLOGY)

COURSE CODE : 128

Register Number :

*Signature of the Invigilator
(with date)*

COURSE CODE : 128

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 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. The techniques of sterilization were introduced by
 - (A) Louis Pasteur
 - (B) Robert Koch
 - (C) Ferdinand Cohn
 - (D) John Needham
2. When flagella are distributed all round the bacterial cell the arrangement is known as
 - (A) Monotrichus
 - (B) Lophotrichus
 - (C) Amphitrichous
 - (D) Peritrichous
3. In holder method of Pasteurization, milk and butter are kept at
 - (A) 63°C for 30 minutes
 - (B) 63°C for 60 minutes
 - (C) 72°C for 20 minutes
 - (D) 72°C for 30 seconds
4. Which of the following articles can be sterilized in an autoclave?
 - (A) Dressing material
 - (B) Gloves
 - (C) Culture media
 - (D) All of the above
5. Type I hypersensitivity reaction is mediated by
 - (A) IgE
 - (B) IgG
 - (C) IgM
 - (D) IgD
6. Which of the following bacteria produces coagulase?
 - (A) Staphylococcus epidermis
 - (B) S.aureus
 - (C) S. Saprophyticus
 - (D) S. Hominis
7. The causative agent of Waterhouse-Fredericson's syndrome is
 - (A) Neisseria meningitides
 - (B) Treponema pallidum
 - (C) Streptococcus pyogens
 - (D) Staphylococcus aureus
8. Stormy clot reaction is useful in identification of
 - (A) Clostridium tetani
 - (B) C.botulinum
 - (C) C.difficile
 - (D) C.perfringens
9. Humans become infected with Mycobacterium tuberculosis most frequently by
 - (A) Contact
 - (B) Inoculation
 - (C) Inhalation
 - (D) Ingestion

10. Appearance of a hard chancre is characteristic of
(A) Tertiary syphilis (B) Latent syphilis
(C) Secondary syphilis (D) Primary syphilis
11. The most common cause of urinary tract infection is
(A) *Klebsiella pneumonia* (B) *Escherichia coli*
(C) *Proteus vulgaris* (D) *Citrobacter freundii*
12. Which of the following media can serve as transport medium for *Vibrio cholera*?
(A) Selenite F broth (B) Tetrathionate broth
(C) Venkatraman-Ramakrishnan medium (D) Nutrient broth
13. Colonies resembling molar teeth are produced by
(A) *Actinomyces israelii* (B) *Nocardia brasiliensis*
(C) *N. asteroides* (D) *Actinomyces madurae*
14. Negri bodies are found in cells infected with
(A) Rabies virus (B) Vaccinia virus
(C) Fowlpox virus (D) Paramyxovirus
15. What is the route of transmission of rubella virus?
(A) Conjunctiva (B) Genital tract
(C) Alimentary tract (D) Respiratory tract
16. Koplik's spots are characteristic of which of the following infections?
(A) Mumps (B) Measles
(C) Herpes (D) Rubella
17. Which is the commonest mode of transmission of HIV?
(A) Parenteral (B) Sexual
(C) Perinatal (D) Oral
18. Which of the following dermatophyte can infect skin, hair and nails.
(A) *Trichophyton* (B) *Microsporum*
(C) *Epidermophyton* (D) None of the above

19. Histoplasmosis is acquired from
 - (A) Water
 - (B) Animals
 - (C) Soil
 - (D) Man
20. Which of the following dermatophytes is the most common cause species infecting man?
 - (A) *Trichophyton rubrum*
 - (B) *T. Schoenleinii*
 - (C) *T. Mentagrophytes*
 - (D) *M. Canis*
21. Amobiasis is an infection of the large intestine in man caused by
 - (A) *Entamoeba gingivalis*
 - (B) *E. Histolytica*
 - (C) *E. Nana*
 - (D) *E. Hartmanni*
22. Cysts are the infective stage to man in infection with
 - (A) *Wucheria bancrofti*
 - (B) *Plasmodium sp*
 - (C) *Giardia lamblia*
 - (D) *Taenia solium*
23. *Plasmodium falciparum* causes
 - (A) Benign terian malaria
 - (B) *Ovale malaria*
 - (C) Quartan malaria
 - (D) Malignant tertian malaria
24. Hook worm infection in man leads to deficiency of
 - (A) Vitamin A
 - (B) Iron
 - (C) Vitamin B12
 - (D) Folic acid
25. In which of the following conditions the microfilaria is present in peripheral blood?
 - (A) Elephantiasis
 - (B) Allergic manifestations
 - (C) Occult filariasis
 - (D) Classical filariasis
26. The resistance that is transmitted passively to a recipient in the 'readymade' form is known as
 - (A) Acquired immunity
 - (B) Passive immunity
 - (C) Innate immunity
 - (D) All of the above
27. The damage to the respiratory epithelium and excessive bronchial secretions caused by
 - (A) Primary infection
 - (B) Secondary infection
 - (C) Tertiary infection
 - (D) All of the above

28. Adenovirus cause infections in
(A) Intestine (B) Bladder
(C) Respiratory tract (D) All of the above
29. The causative agent of syphilis
(A) Mycobacterium tuberculosis (B) Vibrio cholera
(C) Treponema pallidum (D) Staphylococcus aureus
30. In which phase of bacterial growth curve, cell division stops
(A) Lag phase (B) Log phase
(C) Stationary phase (D) Decline phase
31. Which of the following is a contribution to Microbiology by Louis Pasteur?
(A) Anthrax bacilli (B) Immunity
(C) Polio virus (D) Candida
32. Primary stain used in Gram's stain is
(A) Acid Fuchsin Gram's (B) Iodine
(C) Gentian's violet (D) Malachite green
33. Example of Negative staining is
(A) Potassium iodide (B) India ink
(C) Acridine orange stain (D) Acid fast stain
34. Which one of the following is a virulence factor for bacteria?
(A) Capsule (B) Flagella
(C) Cell membrane (D) Cytoplasmic membrane
35. Paul bunnell test is done for diagnosis of
(A) Infectious mononucleosis (B) Herpes zoster
(C) Poliomyelitis (D) Rabies
36. Filter sterilization is NOT done for which of the following
(A) Vaccines (B) Serum
(C) Antibiotic solution (D) Blood

37. All of the following are a property of Disinfectants EXCEPT
- (A) Should be cheap and easily available
 - (B) They are all corrosive to skin
 - (C) All antiseptic solutions are disinfectants
 - (D) Should be used after diluting at a particular concentration
38. The temperature of the hot air oven suitable for sterilization is
- (A) 100°C for 1/2 an hour
 - (B) 55°C for 45 min
 - (C) 160 °C for 1 hour
 - (D) 200 °C for 10 min
39. MacConkey's agar is an example for
- (A) Selective media
 - (B) Enriched media
 - (C) Differential media
 - (D) Enrichment media
40. Gluteraldehyde solution is used to sterilize
- (A) Endoscopes
 - (B) Glass items
 - (C) Rubber and plastic
 - (D) Operation theatres
41. Robertson's cooked meat media can be used as all of the following EXCEPT
- (A) Transport media
 - (B) Storage media
 - (C) Anaerobic media
 - (D) Selective media
42. Mordant used in gram's stain is
- (A) Gentian violet
 - (B) Gram's iodine
 - (C) Acetone
 - (D) Saffranin
43. What is NOT true about plasmids?
- (A) Transfer of nutrients
 - (B) Transfer of drug resistance
 - (C) Transfer of genetic material
 - (D) Extrachromosomal material
44. Mechanism of genetic transfer can be due to all of the following except following
- (A) Transformation
 - (B) Transduction
 - (C) Conjugation
 - (D) Mutation
45. The holding time of an autoclave is
- (A) 121 °C for 15 minutes at 15psi
 - (B) 100 °C for 1 hour at 15psi
 - (C) 160 °C for 30 minutes at 15psi
 - (D) 170 °C for 30 minutes at 15psi

46. Biological indicator for autoclave is
(A) *Clostridium welchi* spores (B) *Bacillus stereothermophilus* spores
(C) *Anthrax bacillus* spores (D) *Bacillus subtilis*
47. Fimbriae of bacteria help in
(A) Locomotion (B) Phagocytosis
(C) Attachment (D) Exchange of genetic material
48. The disadvantage of ethylene oxide in sterilization is
(A) Irritant to the eyes (B) Carcinogenic
(C) Slow action (D) Corrosive
49. The father of antiseptic surgery is
(A) Louis Pasteur (B) Antonie von Leewenhoeck
(C) Joseph Lister (D) Robert Kock
50. The following diseases are usually water/food borne **EXCEPT**
(A) Cholera (B) Pulmonary tuberculosis
(C) Enteric fever (D) Bacillary dysentery
51. Staphylococcal toxic syndrome is due to
(A) Enterotoxin A (B) Enterotoxin D
(C) Enterotoxin E (D) Enterotoxin F
52. Gas gangrene is caused by
(A) *Clostridium tetani* (B) *Clostridium perfringens*
(C) *Clostridium botulinum* (D) *Clostridium difficile*
53. QUELLUNG REACTION is done to identify which of the following
(A) *Streptococcus pyogenes* (B) *Streptococcus pneumonia*
(C) *Streptococcus mutans* (D) *Streptococcus viridians*
54. One of the following includes the non-suppurative complication of *streptococcus pyogenes*.
(A) Pyoderma (B) Acute rheumatic fever
(C) Ludwig's angina (D) Erysipelas

55. Elek's gel precipitation test is for
(A) Gonorrhoea (B) Diphtheria
(C) Anthrax (D) Pneumonia
56. Medusa head appearance of the colony on nutrient agar is seen in
(A) Staphylococcus aureus (B) Streptococcus mutans
(C) Bacillus anthrax (D) Clostridium tetani
57. Nagler reaction is for rapid detection of
(A) Clostridium perfringens (B) Cornebacterium diphtheria
(C) Nesseria gonorrhoea (D) Streptococcus viridians
58. Oral polio vaccine is a
(A) Live vaccine (B) Killed vaccine
(C) Toxin (D) Toxoid
59. Nissl bodies are seen in
(A) Rabies (B) Polio
(C) Influenza (D) HIV
60. Bullet shaped virus is
(A) Herpes Virus (B) Influenza virus
(C) Rabies Virus (D) Hepatitis virus
61. Hydrophobia is seen in
(A) Herpes (B) Hepatitis
(C) Polio (D) Rabies
62. The confirmatory test for HIV is
(A) Northern blot (B) Western blot
(C) Southern blot (D) Microscopy
63. HIV can be transmitted by all of the following EXCEPT
(A) Blood transfusion (B) Sexual
(C) Insect bite (D) IV drugs users

64. In enteric fever *Salmonella* may be isolated from
 (A) C.S.F. (B) Wound
 (C) Blood (D) Genital secretions
65. Scalded skin syndrome is due to which toxin of *Staphylococcus aureus*
 (A) Epidermolytic toxin (B) Enterotoxin
 (C) Coagulase (D) Haemolysin
66. Metachromatic granules are seen in
 (A) *Corynebacterium diphtheriae* (B) *Clostridium tetani*
 (C) *Mycobacterium tuberculosis* (D) *Actinomyces*
67. *Cryptococcus* can be diagnosed by
 (A) Negative staining (B) Acid fast time
 (C) Silver staining (D) Wet mount
68. Which of the following is a dimorphic fungi?
 (A) *Histoplasma* (B) *Candida*
 (C) *Aspergillus* (D) *Mucor*
69. Microconidia are abundantly seen in
 (A) *Trichophyton rubrum* (B) *Epidermophyton floccosum*
 (C) *Microsporum gypseum* (D) *Microsporum nanum*
70. Percentage of KOH used to demonstrate fungus from clinical samples is
 (A) 10% KOH (B) 15% KOH
 (C) 30% KOH (D) 35% KOH
71. Undisturbed morphology of the fungal growth can be seen by
 (A) Chlamydospore formation (B) Slide culture technique
 (C) Germ tube technique (D) Hair ball technique
72. Which of the following is an antifungal agent?
 (A) Ketoconazole (B) Chloramphenicol
 (C) Zidovudine (D) penicillin

73. An example of DNA virus is
(A) Influenza virus (B) Rabies virus
(C) Herpes virus (D) Polio virus
74. The following immunoglobulin involved in allergy is
(A) Ig G (B) Ig E
(C) Ig M (D) Ig A
75. Which of the following hepatitis viruses can be transmitted parenterally?
(A) Hepatitis B (B) Hepatitis C
(C) Hepatitis D (D) All of the above
76. Molluscum contagiosum is caused by
(A) Pox virus (B) Herpes virus
(C) Adeno virus (D) Mump virus
77. Movement of bacilli is facilitated by
(A) Pili (B) Flagella
(C) Capsule (D) Cytoplasm
78. Serodiagnostic tests in syphilis include
(A) VDRL (B) TPHA
(C) TPI (D) All of the above
79. The common focal pyogenic infection of the skin is caused by
(A) Pneumococcus (B) E.coli
(C) Staphylococcus (D) H. influenza
80. Enterobacteriaceae include all EXCEPT
(A) Salmonella (B) Proteus
(C) Shigella (D) Haemophilus
81. The culture medium used for growing tubercle bacillus is
(A) Nutrient agar (B) Blood agar
(C) L.J. Medium (D) None of the above

82. The vaccine used against tuberculosis is
 (A) DPT (B) BCG
 (C) MMR (D) None of the above
83. Pulmonary tuberculosis is commonly caused by
 (A) *Mycobacterium tuberculosis* (B) *Mycobacterium bivia*
 (C) Atypical mycobacteria (D) All of the above
84. The selective medium for *Vibrio cholera* is
 (A) MacConkey agar (B) Chocolate agar
 (C) TCBS medium (D) DCA medium
85. Widal test detects antibodies to the following EXCEPT
 (A) 'Vi' antigen (B) *Salmonella typhi* 'O' antigen
 (C) *Salmonella typhi* 'H' antigen (D) 'H' antigen of *Salmonella* A & B
86. Lancefield grouping of *Streptococci* is based on
 (A) 'M' Protein (B) 'C' Carbohydrate antigen
 (C) Capsular polysaccharide (D) Teichoic acid
87. Drumstick appearance is characteristic of
 (A) *Clostridium welchii* (B) *Clostridium tetani*
 (C) *Clostridium difficile* (D) *Clostridium botulinum*
88. Rice water stools are characteristic of infection with
 (A) *Escherichia coli* (B) *Salmonella typhi*
 (C) *Vibrio cholera* (D) *Shigella sonnei*
89. Zoonotic disease among the following is
 (A) Diphtheria (B) Typhoid
 (C) Leprosy (D) Leptospirosis
90. Spirochaetes in wet mount are best visualized by
 (A) Compound microscope (B) Dissection microscope
 (C) Electron microscope (D) Dark field microscope
91. Antibiotic which acts on nucleic acid synthesis of bacteria is
 (A) Penicillins (B) Aminoglycosides
 (C) Quinolones (D) Imidazoles

92. Efficacy of a disinfectant is tested by the following methods EXCEPT
(A) Rideal Walker test (B) Kelsey-Sykes test
(C) Kirby Bauer test (D) Chick Martin test
93. Phage mediated transfer of genes among bacteria is called as
(A) Conjugation (B) Transduction
(C) Transformation (D) Transposition
94. Example of a mechanical vector among the following is
(A) Anopheles mosquito (B) House fly
(C) Rat flea (D) Toxic tick
95. Cystoscopes are sterilized by
(A) Boiling at 100°C (B) Soap and water
(C) Glutaraldehyde (D) Iodine
96. Antibigram is done in
(A) Blood agar (B) Nutrient agar
(C) Muller-Hinton agar (D) MacConkey agar
97. The vaccines which are given soon after birth are the following EXCEPT
(A) Oral polio vaccine (B) Hepatitis B Vaccine
(C) Tetanus toxoid (D) BCG vaccine
98. Spore bearing bacteria is
(A) Staphylococcus (B) Rickettsia
(C) Spheroplasts (D) Clostridium
99. Post operative wound infections are commonly caused by
(A) Staphylococcus aureus (B) Streptococcus pyogenes
(C) Pseudomonas aeruginosa (D) Candida albicans
100. Organisms are grown outside the body with the aid of
(A) Autoclave (B) Hot air oven
(C) Incubator (D) Water bath
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