



VINAYAKA MISSION'S RESEARCH FOUNDATION, SALEM
(Deemed to be University under section 3 of the UGC Act 1956)

Ph.D Entrance Test – November – 2025

Faculty of Arts & Science / Microbiology

Instructions / Note:

1. Answer all the questions. Each question carries one mark.
2. No negative marks for wrong answers.
3. Read each question carefully and answer in the OMR sheet provided for each question with only blue/ black pen to fill the circles in the OMR Sheet.
4. Question number 1 - 35 questions belong to Research Methodology component and Question number 36-70 questions belong to the subject at PG level
5. Return the question paper along with the OMR sheet.

36. The mucous membranes of the respiratory tract are part of _____
- A. Second line of defense
 - B. Cell-mediated immunity
 - C. First line of defense
 - D. Humoral immunity
37. A medium that allows differentiation between bacterial species based on metabolic activity is called _____
- A. Enriched medium
 - B. Selective medium
 - C. Differential medium
 - D. Transport medium
38. Which component in Mannitol Salt Agar inhibits non-halophilic bacteria?
- A. Phenol red
 - B. High salt concentration
 - C. Neutral red
 - D. Crystal violet
39. Blood agar is classified as both a(n) _____
- A. Selective and enriched medium
 - B. Enriched and differential medium
 - C. Differential and selective medium
 - D. Transport and enrichment medium



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40. In the Gram stain, the primary stain is _____
- A. Iodine
 - B. Safranin
 - C. Crystal violet
 - D. Alcohol
41. The process of synthesizing a protein from mRNA is called _____
- A. Transcription
 - B. Replication
 - C. Translation
 - D. Transduction
42. *Wuchereria bancrofti* microfilariae exhibit nocturnal periodicity, peaking in blood around ____
- A. 10 AM–2 PM
 - B. 10 PM–2 AM
 - C. 12 PM–4 PM
 - D. 6 PM–10 PM
43. The definitive host for *Plasmodium* spp. Is _____
- A. Humans
 - B. Mosquitoes
 - C. Tsetse flies
 - D. Sandflies
44. The infective stage of *Taenia solium* for humans is _____
- A. Proglottid
 - B. Cysticercus
 - C. Oncosphere
 - D. Egg
45. The pH of human skin is typically _____
- A. 3–5
 - B. 6–7
 - C. 7–8
 - D. 8–9
46. Mycolic acids are a key component of the cell wall in _____
- A. *Escherichia coli*
 - B. *Mycobacterium tuberculosis*
 - C. *Staphylococcus aureus*
 - D. *Pseudomonas aeruginosa*



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47. Hepatitis B virus is classified under Baltimore Class _____
- A. II (dsDNA)
 - B. IV (+ssRNA)
 - C. V (-ssRNA)
 - D. VII (dsDNA-RT)
48. The "HBsAg" is associated with _____
- A. Hepatitis A
 - B. Hepatitis B
 - C. Hepatitis C
 - D. HIV
49. The anaerobic jar method is used to culture _____
- A. Obligate aerobes
 - B. Facultative anaerobes
 - C. Obligate anaerobes
 - D. Microaerophiles
50. Chronic diarrhea with fatty stools is a hallmark of infection by _____
- A. *Entamoeba histolytica*
 - B. *Giardia lamblia*
 - C. *Cryptosporidium parvum*
 - D. *Balantidium coli*
51. Hepatic amoebiasis is primarily caused by _____
- A. *Naegleria fowleri*
 - B. *Entamoeba histolytica*
 - C. *Acanthamoeba* spp.
 - D. *Leishmania donovani*
52. The vector for *Trypanosoma brucei* is _____
- A. Sandfly
 - B. Mosquito
 - C. Tsetse fly
 - D. Housefly



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53. The Leishmania amastigote stage is characterized by _____
- A. Free flagellum
 - B. No external flagellum
 - C. Flagellum attached to the body
 - D. Multiple flagella
54. Viral uncoating refers to the _____
- A. Release of viral genome into the host
 - B. Attachment to host receptors
 - C. Assembly of viral particles
 - D. Synthesis of viral proteins
55. A helical capsid structure is seen in _____
- A. Adenovirus
 - B. Influenza virus
 - C. Poliovirus
 - D. Herpesvirus
56. The causative agent of infectious mononucleosis is _____
- A. Varicella-zoster virus
 - B. Epstein-Barr virus
 - C. Cytomegalovirus
 - D. Herpes simplex virus
57. The principle of vaccination was first demonstrated using _____
- A. Attenuated Mycobacterium
 - B. Cowpox virus
 - C. Heat-killed Salmonella
 - D. Rabies virus
58. Rotavirus is classified under Baltimore Class _____
- A. III (dsRNA)
 - B. IV (+ssRNA)
 - C. V (-ssRNA)
 - D. VI (ssRNA-RT)
59. Hemolysis caused by Streptococcus pyogenes on blood agar is termed _____
- A. Alpha
 - B. Beta
 - C. Gamma
 - D. Delta



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60. Psychrophilic bacteria grow optimally at _____
- A. 0–15°C
 - B. 20–45°C
 - C. 50–70°C
 - D. Above 80°C
61. The inventor of pasteurization was _____
- A. Robert Koch
 - B. Louis Pasteur
 - C. Joseph Lister
 - D. Alexander Fleming
62. Yogurt production primarily involves _____
- A. *Saccharomyces cerevisiae*
 - B. *Lactobacillus bulgaricus*
 - C. *Penicillium camemberti*
 - D. *Bacillus subtilis*
63. Kimchi is a fermented product made from _____
- A. Cabbage
 - B. Soybeans
 - C. Milk
 - D. Fish
64. Sterilization using moist heat at 121°C is achieved in a(n) _____
- A. Autoclave
 - B. Hot air oven
 - C. Incubator
 - D. Laminar flow hood
65. Lipopolysaccharide (LPS) is a component of _____
- A. Gram-positive cell walls
 - B. Gram-negative outer membranes
 - C. Mycobacterial cell walls
 - D. Viral envelopes
66. *Penicillium* species are used in the production of _____
- A. Yogurt
 - B. Tempeh
 - C. Blue cheese
 - D. Sauerkraut



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67. The "D value" in sterilization refers to _____
- A. Time to kill 90% of microbes
 - B. Temperature required for denaturation
 - C. pH tolerance of bacteria
 - D. Radiation dose
68. *Trichinella spiralis* is transmitted through _____
- A. Contaminated water
 - B. Undercooked pork
 - C. Mosquito bites
 - D. Soil contact
69. The definitive host for *Echinococcus granulosus* is _____
- A. Humans
 - B. Dogs
 - C. Sheep
 - D. Cats
70. *Candida albicans* is a _____
- A. Bacterium
 - B. Virus
 - C. Fungus
 - D. Protozoan

