

SAPTHAGIRI NPS UNIVERSITY
MBBS PHASE II University Examinations August / September– 2025
SUBJECT: MICROBIOLOGY PAPER-1 (QP CODE: 1011)

Your answer should be specific to the question asked
Draw neat, labelled diagrams wherever necessary

Maximum Marks: 100

Date: 28/08/2025

Time: 3 hrs

I. Long Essay

2 X 10 = 20 Marks

1. Three members of a family who attended a gathering in a village complained of passing loose stools about 6 to 10 times per day. On examination all of them had signs of dehydration and stool samples collected appears like rice water. (2+2+4+2)
 - a. Name the most probable clinical diagnosis and causative bacterial agent.
 - b. Describe pathogenesis of this condition
 - c. Describe laboratory diagnosis of this condition.
 - d. Outline the measures to manage this outbreak.

2. A 23-year-old male patient from an endemic area came to the OPD with complaints of intermittent fever with chills and rigors for the past 3 days. There was intense sweating following each fever episode. On examination he was febrile with temperature of 101°F and had mild Splenomegaly. Peripheral smear study shows the presence of parasites inside RBC's (multiple ring forms within single RBC) (2+2+2+4)
 - a. Name the causative agent and the vector.
 - b. Describe the life cycle of the causative agent.
 - c. Write the pathogenicity of the causative agent.
 - d. Describe the laboratory diagnosis of the causative agent.

II. Short Essays:

8 X 5=40 Marks

3. Bacterial spore and methods of killing the spores.
4. Antibiotic sensitivity test.
5. Describe in detail delayed type of hypersensitivity.
6. 29-year-old female came to casualty with complaints of high-grade fever, severe joint pain, back pain, and myalgia. Gradually she developed petechial rashes over the body. On examination, she was found to have jaundice, hepatomegaly, and low platelet count (30,000/cumm). A tourniquet test done over cubital fossa shows petechial spots. (2+3)
 - a. What is the clinical diagnosis and how is this disease transmitted?
 - b. How will you confirm the diagnosis?
7. Write about the laboratory diagnosis and prophylaxis of HBV.
8. Laboratory diagnosis of anaerobic infections.
9. Varicella-Zoster Virus
10. Laboratory diagnosis of eumycetoma

III. Short Answers

10 X 3=30 Marks

11. Monoclonal antibody
12. List 3 mechanisms of Autoimmunity
13. Lab diagnosis of leptospirosis
14. Name 3 viruses transmitted through blood transfusion.
15. Lab diagnosis of H. pylori
16. Name 3 Arboviruses found in India.
17. Lab diagnosis of Giardiasis
18. Germ tube test.
19. Name 3 Mechanisms of Horizontal Gene Transfer.
20. Mention three parasites causing anaemia.

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Pooja Saenah
28/8/25
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IV. MCQs

10 X 1 = 10 Marks

21. i) Which of the following bacterial structure is primarily responsible for adherence to host cells?
- a) Cell wall
 - b) Capsule
 - c) Flagella
 - d) Pili (fimbriae)
- ii) Which immunoglobulin is the first to be produced in a primary immune response?
- a) IgG
 - b) IgA
 - c) IgM
 - d) IgE
- iii) The most common cause of infective endocarditis in native valves is:
- a) Pseudomonas aeruginosa
 - b) Staphylococcus aureus
 - c) Escherichia coli
 - d) Streptococcus pneumoniae
- iv) A common cause of pseudomembranous colitis, often following antibiotic use, is:
- a) Bacteroides fragilis
 - b) Clostridium perfringens
 - c) Clostridium difficile
 - d) Enterococcus faecalis
- v) Necrotizing fasciitis, rapidly progressive and severe soft tissue infection is often caused by:
- a) Staphylococcus epidermidis
 - b) Group A Streptococcus (Streptococcus pyogenes)
 - c) Corynebacterium diphtheriae
 - d) Neisseria meningitidis
22. i) Gas gangrene is a severe infection of muscle tissue caused by:
- a) Mycobacterium tuberculosis
 - b) Clostridium perfringens
 - c) Streptococcus agalactiae
 - d) Enterobacter cloacae
- ii) Leishmania donovani can be cultured on:
- a) Blood Agar
 - b) NNN Media
 - c) Diamond's media
 - d) RPMI Media
- iii) Gene coding for core antigens of HIV is:
- a) Gag
 - b) Env
 - c) Pol
 - d) Tat
- iv) All are agglutination reactions, **Except**:
- a) VDRL test
 - b) Standard agglutination test
 - c) Widal test
 - d) Paul Bunnell test
- v) The best disinfectant for sterilization of endoscopes is:
- a) Alcohol
 - b) Betadine
 - c) Glutaraldehyde
 - d) Dettol

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28/8/25

SAPTHAGIRI NPS UNIVERSITY

MBBS PHASE II University RESIT Examinations October / November– 2025

SUBJECT: MICROBIOLOGY PAPER I (QP CODE: 1011)

Your answer should be specific to the question asked

Draw neat labelled diagrams wherever necessary

Maximum Marks: 100

Date: 27/10/2025

Time: 3 hrs.

I. Long Essays:

2X10=20 Marks

1. A 29-year-old male with a history of multiple sex partners is admitted with complaints of unexplained fever, progressive loss of weight, persistent diarrhoea and generalized lymphadenopathy for the past 6 months. (1+3+4+2)
 - a. What is your probable diagnosis?
 - b. Discuss the pathogenesis and clinical stages of this condition.
 - c. Discuss specific laboratory tests required to diagnose the above clinical condition.
 - d. What are the preventive measures for the above infection?
2. A 25-year-old female presents with 2 day history of bloody diarrhoea, abdominal cramps, tenesmus, fever of 39°C and appears mildly dehydrated. She gives history of consuming food outside. Stool microscopy reveals presence of blood, mucus and leukocytes. Stool sample has been sent for bacterial culture. (2+3+3+2)
 - a. What is the probable diagnosis and the causative agent?
 - b. Describe in detail the pathogenesis of above condition. Enumerate other agents causing same condition.
 - c. Add a note on laboratory diagnosis.
 - d. How do you manage this condition?

II. Short Essays:

8X5=40 Marks

3. Explain the mechanism of Type IV Hypersensitivity reaction with examples.
4. A 50-year-old man had a crush injury of the leg following road traffic accident. He subsequently developed edema, pain at the site of injury with discolouration and serous discharge. On palpation crepitus was observed. What is the probable diagnosis? Describe Laboratory diagnosis of above condition.
5. Discuss Polymerase chain reaction tests and its implication in diagnostic microbiology.
6. Discuss larva migrans with suitable examples.
7. Enumerate various methods of moist heat sterilisation. Write in detail about autoclave.
8. A 32 years old patient presented with high-grade fever, coated tongue, hepato-splenomegaly and intense headache. A provisional diagnosis of typhoid fever was made. How will you confirm the diagnosis in the laboratory?
9. Laboratory diagnosis of Dermatophytoses.
10. A 37 year old male presented to emergency department with complaints of sudden episode of high grade fever and acute pain in right hypochondrium. He gives on & off history of dysentery for past two months. Pus aspirated from liver was thick chocolate brown in colour. (1+1+3)
 - a. Identify the clinical condition.
 - b. What is the probable causative agent?
 - c. Describe the laboratory diagnosis of this condition.

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III. Short Answers

10X3=30 Marks

11. A 3-year-old boy presented with acute abdominal pain, nausea and vomiting. On examination, the child was malnourished. The stool microscopy revealed bile stained oval eggs with thick albumin coat. Identify the disease and Draw a neat labelled diagram of the egg of the causative agent.
12. Clostridium difficile infection.
13. Expand HACEK group of organisms.
14. List the sites of carriage of MRSA and treatment of carrier state.
15. Classify fungi based on morphological forms give example for each.
16. List three differences between active and passive immunity (only first 3 will be valued).
17. Hepatitis B vaccine and its schedule.
18. Enumerate three viruses causing cutaneous infections (only first 3 will be valued).
19. DEC provocation test.
20. Enumerate three Immunodeficiency disorders (only first 3 will be valued).

IV. MCQ's

10X1 = 10 Marks

21.
 - i. What is the primary vector responsible for transmitting yellow fever virus
 - a. Anopheles mosquito
 - b. Aedes aegypti
 - c. Culex fatigans
 - d. Mansonia mosquito
 - ii. Which of the following organism does not follow Koch's postulates
 - a. Escherichia coli
 - b. Staphylococcus aureus
 - c. Mycobacterium leprae
 - d. Pseudomonas aeruginosa
 - iii. Which is the infective form of malarial parasite to man
 - a. Merozoite
 - b. Sporozoite
 - c. Trophozoite
 - d. Gametocyte
 - iv. Antigens that participate in graft rejection are called
 - a. Human Leukocyte antigens
 - b. Heterophile antigens
 - c. Heterologous antigens
 - d. Haptens
 - v. During which of the following phases are bacteria most susceptible to antibiotics
 - a. Lag phase
 - b. Log phase
 - c. Stationary phase
 - d. Phase of decline

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22.

- i. Reynold-Braude phenomenon is shown by
 - a. Candida auris
 - b. Cryptococcus neoformans
 - c. Candia albicans
 - d. Candida tropicalis

- ii. Mechanism involved in pathogenesis of cholera infection
 - a. Invasiveness
 - b. Agglutination
 - c. Toxin mediated
 - d. Receptor mediated

- iii. A pregnant women developed painful vesicular lesions around her mouth. Examination of the vesicular fluid was positive for multinucleated giant cells. What is the likely organism associated?
 - a. Cocksackie virus
 - b. Herpes simplex virus
 - c. Measles virus
 - d. Parvo virus

- iv. CAMP test is useful in identification of
 - a. Streptococcus agalactiae
 - b. Streptococcus pneumoniae
 - c. Streptococcus pyogenes
 - d. Streptococcus viridans

- v. All of the following are heterophile agglutination tests, except
 - a. Weil felix reaction
 - b. Widal agglutination test
 - c. Paul Bunnel test
 - d. Cold agglutination test

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