

03/26

The West Bengal University of Health Sciences
MBBS 2nd Professional Examination (New Regulation)
January-February, 2026

Subject: Microbiology
Paper: I

Full Marks: 100
Time: 3 Hours

Attempt all questions and answer in sequential order. The figures in the margin indicate full marks.

1. a) An adult male suffering from continuous fever for 10 days came to the OPD. On physical examination, he had coated tongue, relative bradycardia and mild hepatosplenomegaly. 1+2+(4+5)+3
- i. What is your provisional diagnosis?
 - ii. What are the causative organisms?
 - iii. Describe the pathogenesis and laboratory diagnosis of the disease.
 - iv. Mention how occurrence of such disease can be prevented.
- b) A 45 year old female patient presents with tender, warm, swollen finger joints and morning stiffness in the joints of toes and fingers for last 6 months accompanied with intermittent fever, fatigue and loss of appetite for 1 month. 1+6+4+2+2
- i. What is the most probable diagnosis?
 - ii. Describe the pathogenesis of this condition.
 - iii. Mention the serological markers/biomarkers supporting the diagnosis..
 - iv. What is Arthrus reaction?
 - v. How type II and type III hypersensitivity reactions differ from each other?
2. Answer the following:
- a) Enumerate the different types of hospital acquired infections. Name four important bacteria causing HAI. Discuss the specific infection control measures related to contact precautions. 4+2+4
 - b) Discuss the importance and method of Biomedical Waste segregation. 4+6
 - c) Enumerate the bacteria causing food poisoning. Discuss the laboratory diagnosis of food poisoning with onset within 8 to 16 hours of consumption of the food. 5+5
3. Write short notes on the following: 2x5
- a) Systemic candidiasis.
 - b) Confidentiality maintenance of patient information.
4. Explain the following statements: 5x4
- a) Anaerobic bacteria cannot be isolated by routine culture technique.
 - b) Complement can be activated in many ways.
 - c) Anaemia as a presenting feature of hookworm infection.
 - d) Cytopathic effects help in viral diagnosis.
 - e) Microbiological waste should be segregated before disposal.
5. Choose the correct option for each of the following: 10x1
- i. The following substances can be added to produce an anaerobic environment except:
 - a. Ascorbic Acid
 - b. Glutathione
 - c. Glycerol
 - d. Cysteine

ii. Epidemic relapsing fever is caused by:

- a. *Borrelia recurrentis* b. *B burgdorferi* c. *B duttonii* d. *B vincentii*

iii. Kary B. Mullis was awarded the Nobel Prize for:

- a. PCR b. Northern blotting c. Southern blotting d. Western blotting

iv. A laboratory receives a specimen from an animal which died of anthrax. What is the recommended level of biosafety (BSL) cabinet for handling this specimen?

- a. BSL-1 b. BSL-2 c. BSL-3 d. BSL-4

v. All the following immunoglobulins fix complement EXCEPT:

- a. IgM b. IgG3 c. IgG2 d. IgA

vi. 'Maltese cross' appearance is seen in:

- a. Leishmaniasis b. Trypanosomiasis c. Babesiosis d. Malaria

vii. All the following produce sheathed microfilaria EXCEPT:

- a. *Wuchereria bancrofti* b. *Brugia malayi* c. *Loa loa* d. *Onchocerca volvulus*

viii. Which of the following is not true of *Staphylococcus aureus* food poisoning?

- a. Incubation period 2-6 hours b. Source are meat and milk products
b. Heat labile enterotoxin is responsible d. Type A toxin is responsible for most cases

ix. Which of the following item is used as Probiotics?

- a. Yogurt b. Ice cream c. Custard d. Butter

x. Recrudescence is found in infection with:

- a. *P. vivax* b. *P. falciparum* c. *P. malariae* d. *P. ovale*