2019 Scheme

Q.P. Code: 215001 Reg. no.: .....

Second Professional MBBS Degree Regular/Supplementary Examinations
August 2025
Microbiology Paper I

Time: 3 Hours Total Marks: 100

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers*
- *Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

1. Multiple Choice Questions (20x1=20)

The responses for MCQ questions (Q.No. i to Q.No. xx) shall be written in the space provided for answering MCQ questions at page No. 51 of the answer book (the inner portion of the back cover page (PART III)). Responses for MCQs marked in any other part/page of the answer book will not be valued

Read the following clinical history and select the most appropriate response for questions (i) -(v)

A 25 years old lady came to surgical OP with complaints of fever pain and swelling of the breast of 3 days duration. Gram stain of pus aspirate revealed gram positive cocci along with pus cells.

i. What is the most probable organism
   a) Staphylococcus b) Streptococcus c) Enterococcus d) Pneumococcus

ii. Name the biochemical test to identify the pathogenic species
   a) Catalase b) Coagulase c) Oxidase d) Nitrate test

iii. Drug of choice for the sensitive organism
   a) Vancomycin b) Linezolid c) Teicoplanin d) Coxacillin

iv. An example of toxin mediated disease caused by this organism
   a) Impeligo c) Staphylococcal Scalded Skin Syndrome
   b) Osteomyelitis d) Urinary tract infection

v. Toxin responsible for the above condition
   a) Epidermolytic toxin c) Enterotoxin
   b) Toxic shock syndrome toxin d) Haemolytic toxin

Question numbers (vi)-(x) are multiple response type questions. Read the statements & mark the answers appropriately.

vi. All are true about bacterial spores
   1) They are the method of reproduction 2) They are resistant to dessication
   3) They can be destroyed by autoclaving at 120^{0}C for 15 minutes
   4) They are produced by the genus Bacillus
   a) 1, 2 & 3 are correct c) 1, 2 & 4 are correct
   b) 1, 3 & 4 are correct d) 2, 3 & 4 are correct

vii. Examples of enrichment media are
   1) Selenite F broth 2) Tetra thionate broth 3) Glucose broth 4) Brain heart infusion broth
   a) 1 & 2 are correct c) 2, 3 & 4 are correct
   b) 2 & 3 are correct d) 1, 3 & 4 are correct

viii. Examples of broad spectrum antibiotics are
   1) Tetracycline 2) Gentamicin 3) Ciprofloxacin 4) Caftnaxone
   a) 1, 2 & 3 are correct c) 2, 3 & 4 are correct
   b) 1, 3 & 4 are correct d) 1, 2, 3 & 4 are correct

ix. Examples of RNA viruses are
   1) Enterovirus 2) Influenza virus 3) Measles virus 4) Herpes virus
   a) 1, 2 & 3 are correct c) 3 & 4 are correct
   b) 1, 3 & 4 are correct d) 1, 2, 3 & 4 are correct

x. All are continuous cell line cultures
   1) Human carcinoma of cervix cell line 2) Rhesus monkey kidney cell culture
   3) Human epithelioma of larynx cell line 4) Human embryonic kidney cell strain
   a) 1 & 2 are correct c) 3 & 4 are correct
   b) 1 & 3 are correct d) 2 & 4 are correct

(PTO)

Question numbers (xi) – (xv) are single response types

xi. Malaria is transmitted by
a) Culex mosquito b) Anophales mosquito c) Aedes mosquito d) All of the above

xii. Trypanosoma cruzei causes
a) Chagas disease c) West African sleeping sickness
b) East African sleeping sickness d) Kalaazar

xiii. Lymphatic filariasis is caused by
a) Wuchereria bancrofti b) Brugia malayi c) Brugia timori d) All of the above

xiv. Guinea worm disease is acquired by the ingestion of contaminated water containing
a) Embryonated eggs b) Cyclops c) Adult worm d) Free swimming larva

xv. An example of systemic mycosis is
a) Sporotrichosis b) Rhinosporidiosis c) Histoplasmosis d) Chromoblastomycosis

Question numbers (xvi) – (xx) consists of two Statements-Assertion (A) and reason (R). Answer these questions by selecting the appropriate options given below.

a) Both A and R are true and R is the correct explanation of A **c) A is true and R is false**
b) Both A and R are true and R is not the correct explanation of A **d) A is false but R is true**

xvi. **Assertion:** Bronchoscopes are sterilized by high level sterilants
Reason: Bronchoscopes are critical instruments

xvii. **Assertion:** Viral envelope is lipoprotein in nature
Reason: Enveloped viruses are highly resistant

xviii. **Assertion:** Dimorphic fungi grows as filamentous form at 22^{0}C
Reason: Histoplasma capsulatum belongs to dimorphic fungi

xix. **Assertion:** Pityriasis versicolor is a subcutaneous mycoses
Reason: Malassezia furfur is the causative agent for Pityriasis versicolor

xx. **Assertion:** Autoclave is an example of moist heat method of sterilization
Reason: Steam is the sterilizing agent in autoclave

Essays **(2x10=20)**

2. A 32 year old man admitted to hospital with cellulitis of the left arm following fever for 15 days. On examination, he was emaciated and had pallor. Physical examination revealed multiple needle stick marks on his upper and lower limbs. He had splinter hemorrhage and splenomegaly. Auscultation revealed a systolic murmur on left sternal border.
   a) What is the probable diagnosis.
   b) What are the organisms responsible for the disease.
   c) Lab diagnosis of the above condition and add a note on Duke's criteria. (1+4+5)
3. A 10 years old child came to paediatric OP with complaints of fever and erythematous rashes of 4 days duration. His platelet count was 20000.
   a) What is your provisional diagnosis.
   b) Name the causative organisms.
   c) Discuss the pathogenesis of this condition.
   d) How do you confirm the clinical diagnosis.
   e) Discuss the management of the patient.
   f) Briefly describe the prophylaxis. (1+2+2+3+1+1)

Short Essays **(6x6=36)**

4. Discuss horizontal gene transfer methods and its clinical significance.
5. Name all the species of malarial parasites and write the life cycle of Plasmodium vivax. (2+4)
6. What are the causative agents of mycotic mycetoma. Write about the clinical features and laboratory diagnosis of mycotic mycetoma. (1+2+3)
7. Explain the ethical rule of autonomy.
8. Classify immunity and add a note on passive immunity with examples. (2+4)
9. Draw a neat diagram of Immunoglobulin A (Ig A) and write a short essay on IgA. (2+4)

Short Answers **(6x4=24)**

10. Discuss NACO strategy III.
11. Classify hypersensitivity reactions and add a note on type IV hypersensitivity reaction. (1+3)
12. Enumerate healthcare associated infections and one causative organism. (2+2)
13. Write in brief about biomedical waste management.
14. Define enriched media. Give THREE examples.
15. Name FOUR gaseous disinfectants.

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