

QP CODE : 1030

**Rajiv Gandhi University of Health Sciences, Karnataka**  
MBBS Phase – II (CBME) Degree Examination - 13-Feb-2023

Time: Three Hours

Max. Marks: 100 Marks

**MICROBIOLOGY – PAPER I (RS-4)**

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(QP contains two pages)

Your answers should be specific to the questions asked  
Draw neat, labeled diagrams wherever necessary

2 x 10 = 20 Marks

**LONG ESSAYS**

1. Mr. A, 40 yrs old male presents with painful vesicular lesions on the trunk region. He informs the dermatologist that he is getting this for the second time in the same year. Hematological investigations revealed that he had leucopenia with lymphocytopenia. Tzanck smear from the vesicles showed cells with ground glass appearance. Further tests revealed that he was reactive to HIV
  - a) What is the clinical condition the patient presented with?
  - b) Draw a neat labelled diagram of HIV
  - c) Discuss the laboratory diagnosis of HIV infection
  - d) Add a note on the post-exposure prophylaxis against HIV after needle stick injury as per NACO guidelines
2. A 16 year old girl presented with fever, abdominal pain, loose stools with blood and mucus. Microscopic examination of stool showed many pus cells and non-motile bacilli
  - a) Enumerate the causative agents of dysentery
  - b) Discuss the pathogenesis and laboratory diagnosis of Shigellosis
  - c) Compare and contrast Amoebic dysentery and Bacillary dysentery

8 x 5 = 40 Marks

**SHORT ESSAYS**

3. Laboratory diagnosis of Malaria
4. Define cytokines and discuss their role in immune response
5. Give an outline of laboratory diagnosis of bacterial infections
6. Laboratory diagnosis of enteric fever
7. Discuss the mechanisms of drug resistance among bacteria with examples
8. Write briefly on Sporotrichosis
9. Delayed type hypersensitivity reaction
10. Etiopathogenesis and laboratory diagnosis of gas gangrene

10 x 3 = 30 Marks

**SHORT ANSWERS**

11. Mention the markers for acute hepatitis B infection
12. Define transport media and mention its uses
13. DEC provocation test
14. Travellers diarrhoea
15. Chronic muco-cutaneous candidiasis
16. Draw a neat labelled diagram of fertilized ovum of *Ascaris lumbricoides*
17. Laboratory diagnosis of Leprosy
18. Graft versus host reaction
19. Name the three agents causing Mycetoma
20. Laboratory diagnosis of cholera

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**Rajiv Gandhi University of Health Sciences, Karnataka****Multiple Choice Questions****10 x 1 = 10 Marks**

- 21 i) False statement about innate immunity is  
A. Acts as first line of defence  
B. Complement system plays role  
C. Nonspecific  
✓ D. Immunological memory seen
- 21 ii) The antibiotic that cannot be used for treatment of extended spectrum  $\beta$ -lactamase producing organisms  
A. Ceftriaxone  
B. Piperacillin – tazobactam  
✓ C. Amikacin  
D. Meropenem
- 21 iii) Active immunity is not acquired by  
A. Vaccination  
✓ B. Immunoglobulin transfer  
C. Infection  
D. Vaccination and immunoglobulins
- 21 iv) Floatation technique is useful for the detection of  
A. Larva of strongyloides  
B. Fertilised eggs of *Ascaris lumbricoides*  
✓ C. *Taenia* eggs  
D. Operculated eggs of trematodes
- 21 v) A cook in a hostel mess suffered from enteric fever 2 years back. The chronic carrier state in this patient can be diagnosed by  
A. Widal test  
B. Blood culture  
✓ C. Vi Antibody test  
D. Bone marrow culture
- 22 i) Which of the following is the most recommended method for diagnosis of pediatric HIV infection  
✓ A. DNA PCR  
B. RNA PCR  
C. Real time PCR  
D. P24 antigen detection
- 22 ii) The most common agent causing traveller's diarrhoea is  
A. Enteroaggregative *E.coli*  
B. Norovirus  
C. Rotavirus  
✓ D. Enterotoxigenic *E.coli*
- 22 iii) False statement about hyper infection syndrome  
A. It is due to repeated autoinfection cycles  
B. Caused by *strongyloides stercoralis*  
✓ C. Seen in immunocompetent patients  
D. Causes enteritis or Malabsorption
- 22 iv) Koplik's spot in buccal mucosa is diagnostic of  
A. Mumps  
✓ B. Measles  
C. Erythema infectiosum  
D. Rubella
- 22 v) The granules discharged in mycetoma contain  
A. Bone spicules  
✓ B. Fungal colonies  
C. Pus cells  
D. Digested tissue