

2019 Scheme

Q.P. Code: 216001

Reg. no.:

Second Professional MBBS Degree Regular/Supplementary Examinations December 2024 Microbiology Paper II

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 Answers to MCQ questions (Q.No. i to Q.No. xx) shall be written continuously on the first two writing sheets (ie Page No. 3 & 4) only

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

A 4 year old boy was brought to the emergency with a history of altered sensorium, inability to eat and one episode of seizure in the last 2 days. The child used to play with street dogs.

- What is the likely clinical diagnosis
 - Guillain barre syndrome
 - ECHO virus encephalitis
 - Rabies
 - Herpes Simplex encephalitis
- An antemortem diagnostic method is
 - Negri bodies in brain by Immunohistochemistry
 - Antigen in corneal smear by immunofluorescence
 - Antibody detection in saliva
 - RNA in brain by RTPCR
- Vaccine to prevent rabies in humans is
 - Sheep brain vaccine
 - Neural vaccine
 - Human diploid cell vaccine
 - Jeryl Lynn vaccine
- Rabies virus can be transmitted to humans by all of the following routes EXCEPT
 - Bite by infected bats
 - Inhalation of virus containing aerosols
 - Cornea transplantation
 - Consumption of raw milk of infected animals
- The protein which acts as virulence factor is the
 - Nucleoprotein
 - Glycoprotein G
 - Matrix protein
 - Hemagglutinin

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

- Cholera
 - Has potential to cause pandemics
 - Hanging drop test of stool sample helps in rapid diagnosis
 - Causes dysentery in children
 - Can present as hypovolemic shock in severe cases leading to death
 - 1, 2, 3 are correct
 - 1, 3, 4 are correct
 - 2, 3, 4 are correct
 - 1, 2, 4 are correct
- Bile-stained eggs are seen in infection with
 - Ascaris
 - Hookworm
 - Trichuris
 - Taenia
 - 1, 2, 3 are correct
 - 1, 2, 4 are correct
 - 1, 3, 4 are correct
 - 2, 3, 4 are correct
- Hand foot and mouth disease is **NOT** caused by
 - Cytomegalovirus
 - Coxsackie virus
 - Calicivirus
 - ECHO virus
 - 1, 2, 3 are correct
 - 2, 3, 4 are correct
 - 1, 3, 4 are correct
 - 1, 2, 4 are correct
- This is **NOT** a mode of transmission of *Schistosoma hematobium*
 - Bite of Tsetse fly
 - Consumption of vegetables contaminated with metacercaria
 - Penetration of cercaria through the skin
 - Blood transfusion
 - 2, 3, 4 are correct
 - 1, 2, 3 are correct
 - 1, 3, 4 are correct
 - 1, 2, 4 are correct
- A 28 year old male, following consumption of canned food, came with complaints of difficulty in swallowing, blurred vision, which soon progressed to respiratory paralysis. This bacteria is **NOT** the likely etiology.
 - Enterotoxigenic Escherichia coli
 - Clostridium botulinum
 - Campylobacter jejuni
 - Yersinia enterocolitica
 - 1, 2, 4 are correct
 - 1, 3, 4 are correct
 - 2, 3, 4 are correct
 - 1, 2, 3 are correct

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

- Which of the following parasites causes keratitis.
 - Acanthamoeba
 - Naegleria
 - Balamuthia
 - Sappinia
- Meningitis caused by the following agents can be prevented by vaccination EXCEPT
 - Neisseria meningitidis*
 - Streptococcus pneumoniae*
 - Hemophilus influenzae*
 - Listeria monocytogenes*

Essays

$$(2 \times 10 = 20)$$

2. A 70 year old man was brought to the emergency department with fever, cough, and dyspnoea. Physical examination revealed a dull note on percussion. X-ray chest revealed a patch on the right lung area. The gram stain of sputum sample revealed numerous pus cells and Gram positive lanceolate shaped diplococci.

 - What is the clinical diagnosis and what is the probable etiological agent.
 - What culture media is used to enable the growth of the organism suspected and how will you confirm the identity of the organism.
 - Discuss the virulence factors and pathogenesis of this etiological agent.
 - What are the vaccines available for this etiological agent. Discuss. (2+3+3+2)

3. A 30 year old female was brought to the hospital with complaints of loss of weight and appetite of 3 months duration. On examination, she was jaundiced and hepatomegaly present. she gave a history of blood transfusion in the past. Lab investigation showed she was HBsAg positive.

 - What is the most probable clinical diagnosis.
 - What are the different modes of transmission of this agent.
 - Discuss the laboratory diagnosis of this infection.
 - Add a note on the immunoprophylaxis. (1+2+5+2)

Short Essays

$$(6 \times 6 = 36)$$

4. Hydatid disease.
 5. Define pandemic. Name any four pandemics. Describe in detail strategies taken for their control. (1+2+3)
 6. List FOUR clinically important anaerobes. List samples to be collected. Describe the sample collection process. (2+2+2)
 7. Primary Amoebic meningoencephalitis – discuss etiology, pathogenesis and laboratory diagnosis.(1+2+3)
 8. Mode of transmission, clinical presentation and laboratory diagnosis of Nipah virus infection (2+2+2)
 9. Shigellosis.

Short Answers

$$(6 \times 4 = 24)$$

10. Antibiotic associated diarrhea.
 11. List, in tabular form, the CSF parameters, in normal CSF and in pyogenic, viral and tubercular meningitis.
 12. How will you instruct a patient with suspected lower respiratory tract infection to collect a sputum sample.
 13. How is Toxoplasma gondii transmitted. Add a note on the laboratory diagnosis of congenital Toxoplasma infection.
 14. Modes of transmission and laboratory diagnosis of Monkey pox (M Pox)
 15. List FOUR oncogenic viruses.
