FirstRanker.com
Firstranker's choice
www.FirstRanker.com www.FirstRanker.com

2019 Scheme

Q.P. Code: 216001 **Reg. no.: .....**

Second Professional MBBS Degree Supplementary (SAY) Examinations
March 2025
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 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 year old male presented to the emergency department with history of fever and intense headache for the past 4 days and vomiting since two days. On examination patient has signs of meningitis. Grams stain on the CSF demonstrated gram positive lanceolate displococci

i. What is the probable causative agent for meningitis in this patient
   a) Streptococcus agalactiae
   b) Haemophilus influenzae
   c) Staphylococcus aureus
   d) Streptococcus pneumoniae

ii. An important virulence factor in this bacterium is
   a) Fimbria b) Endotoxin c) Capsule d) Flagellum

iii. This bacterium escapes immune destruction due to
   a) Inhibition of phagocystosis
   b) Production of cyclic AMP
   c) Bile solubility
   d) Autolysis

iv. The available vaccines are
   a) Live attenuated b) Killed vaccine c) Cellular component d) Toxoid

v. Drug of choice for treatment in this patient is
   a) Cefuroxime b) Ceftriaxone c) Ceftazidime d) Cefoxitin

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

vi. Features of paragonimus westermanni infection
   1) Consumption of metacercaria 2) Affects the lung 3) A trematode 4) Penetration of skin
   a) 1, 2, 3 are correct
   b) 1, 2, 3, 4 are correct
   c) 2, 3, 4 are correct
   d) 1, 3 are correct

vii. Pathogens causing loose stools with blood and mucus are
   1) Shigella species
   2) Enteroinvasive Escherichia coli
   3) Entamoeba histolytica
   4) Balanditium coli
   a) 1, 2, 3 are correct
   b) 1, 2, 4 are correct
   c) 1, 3, 4 are correct
   d) 1, 2, 3, 4 are correct

viii. Autoinfection is noted in
   1) Trichruis trichuria
   2) Stronglyloides steroralis
   3) Enterobious vermicularis
   4) Taenia solium
   a) 1, 2, 3, 4 are correct
   b) 1, 2, 3 are correct
   c) 2, 3, 4 are correct
   d) 2, 4 are correct

ix. Opportunistic fungal infections include
   1) Invasive aspergillosis
   2) Cutaneous dermatophytosis
   3) Rhino-cerebral mucormycosis
   4) Cryptococcus meningitis
   a) 1, 2, 4 are correct
   b) 1, 3, 4 are correct
   c) 1, 2, 3, 4 are correct
   d) 3, 4 are correct

x. Pseudomembranous colitis characteristics are
   1) Associated with antibiotic use
   2) Toxins of clostridioides difficile
   3) Treated with intravenous vancomycin
   4) Fecal microbiota transplant is a treatment option
   a) 1, 2, 3, 4 are correct
   b) 1, 2, 4 are correct
   c) 1, 2 are correct
   d) 1, 4 are correct

(PTO)

www.FirstRanker.com

FirstRanker.com
Firstranker's choice
www.FirstRanker.com www.FirstRanker.com

Question numbers xi – xv are single response types

xi. An example for bile stained eggs in the wet mount of stool specimen
a) Enterobius vermicularis b) Hook worm c) Ascaris lumbricoides d) HHymenolepis.

xii. Residents from a slum, develop fever on and off followed by jaundice after recent floods. The most probable zoonotic infection is
a) Enteric fever
b) Leptospirosis
c) Enterically transmitted hepatitis
d) Yellow fever

xiii. Most common cause for vaccine preventable, vector borne encephalitis among children in Asia
a) Herpes simplex encephalitis
b) Dengue encephalitis
c) Rabies encephalitis
d) Japanese B encephalitis

xiv. A 32 year old was admitted with features of severe dehydration following loose stools, rice water in nature, for the past two days. Hanging drop examination of the stool was positive for darting motility. Name the enrichment medium used to transport the stool sample
a) Thioglycollate broth
b) Selenite F broth
c) Alkaline peptone water
d) Amies medium

xv. The viral causative agent of gastroenteritis, for which an effective vaccine is available is
a) Norovirus b) Adenovirus c) Rotavirus d) Astrovirus

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

xvi. A: Naegleria fowleri causes secondary amoebic meningo encephalitis
R: The free living amoeba enters the central nervous system through the nose and cribriform plate.
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true and R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

xvii. A: Beta lactam antibiotics do not act against Chlamydiae pneumoniae
R: Chlamydiae pneumonia lacks a cell wall
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true and R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

xviii. A: Bacterial meningitis due to Haemophilus influenza, among children is preventable
R: A live attenuated vaccine is invluded in the National immunization schedule
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true and R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

xix. A: Acute rheumatic fever is one of the sequelae of sore throat caused by Streptococcus pyogenes
R: The patient will require prophylaxis with penicillin to prevent rheumatic heart disease
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true and R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

xx. A: Influenza viruses are responsible for pandemics over the years
R: Antigenic shift is common is these viruses
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true and R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

Essays **(2x10=20)**

2. A 40-year-old previously healthy adult, presented to the medicine outpatient department with malaise, fatigue, low grade fever, nausea and aversion to food. She complains of itching all over the body. She provides history of multiple blood transfusions following a road traffic accident eight months ago. The anti HBc IgM was positive. AST and ALT (Liver enzymes) were elevated
   a) What is the probable clinical diagnosis
   b) What is the source of infection in this patient. Name other modes of transmission of this infectious agent.
   c) Enumerate the serological markers in different phases of this infection, support with appropriate diagrams.
   d) Write on a note on prevention of this infection (1+3+3+3)

(PTO)

www.FirstRanker.com

FirstRanker.com
Firstranker's choice
www.FirstRanker.com www.FirstRanker.com

3. 35-year-old male came to the surgery out-patient department with vague abdominal discomfort and intermittent pain in the right upper quadrant for the past four months. On examination, there is mild tenderness in the right upper quadrant and hepatomegaly. Ultrasound examination of the abdomen revealed a large, well defined cystic lesion in the right lobe of the liver. The patient has no significant history in the past. He has a fondness for stray dogs in his neighborhood.
   a) What is the probable diagnosis.
   b) Describe the life cycle of the etiological agent and name the intermediate host in the life cycle
   c) Name two organs other than liver where these cysts can occur
   d) Describe the treatment options for this patient
   e) Add a note on prevention of this infection (1+4+1+2+2)

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

4. A 25 year old presented to the emergency with breathlessness, cough and fever since five days. The CT of the chest revealed bilateral ground glass opacities. A working diagnosis of viral pneumonia was made and samples were sent for confirmation of the etiological agent.
   a) What are the samples to be collected and tests performed for confirming the diagnosis of COVID-19 (1+2)
   b) What are the precautions to be taken for sample collection. Add a note on transmission based precautions in the community. (1+2)
5. Etiology and laboratory diagnosis of Cholera. (1+5)
6. A 35 year male presented with cough, fever since the past three weeks and weight loss. Blood counts were normal with raised ESR. Chest x-ray showed right upper lobe consolidation.
   a) What is the clinical diagnosis and probable causative agent.
   b) Describe the laboratory diagnosis with special emphasis on rapid diagnostic methods. (2+4)
7. List four parasites causing lesions in the brain. Describe the life cycle of any one of them. (2+4)
8. List four bacterial zoonotic infections. Describe the laboratory diagnosis of any one of them (2+4)
9. A biopsy was taken from a patient, clinically diagnosed with acid peptic disease, during endoscopy.
   a) Name the site from where the biopsy most likely was taken.
   b) Name the etiological agent and list two mechanisms by which the agent can produce this condition.
   c) Describe a rapid test done on the biopsy material for the above etiological agent. (1+3+2)

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

10. Prevention of transmission of HIV from mother to child.
11. Rabies vaccines.
12. A CSF sample did not reach the laboratory. Discuss the impact on patient care and how this can be prevented.
13. Name the most common yeast causing meningitis in a HIV positive patient. Name a special stain used for its detection in CSF sample. Draw a neat labelled diagram of its appearance under the microscope using the special stain. Name one rapid test to identify this yeast in the CSF sample. (1+1+1+1)
14. Hepatitis C virus- modes of transmission and laboratory diagnosis. (2+2)
15. Nipah virus – modes of transmission and outbreak prevention. (1+3)

****

www.FirstRanker.com