

03/24

The West Bengal University of Health Sciences
MBBS 2nd Professional Examination (New Regulation) March - April 2024

Subject : Microbiology
 Paper : II

Full Marks : 100
 Time : 3 hours

Attempt all questions. The figures in the margin indicate full marks.

1. a) A 40 year old male patient attended emergency with trismus. Relatives of patient informed that he had also muscular pain, stiffness, back pain and also difficulty in swallowing. He got a bullet injury one week back. 1+1+4+3+3+3
 - i) What is the probable clinical diagnosis and causative agent?
 - ii) Briefly discuss the pathogenesis.
 - iii) How you can isolate the organism in the laboratory? Why toxigenicity test is needed after isolation?
 - iv) Outline the laboratory diagnosis of such a case.
 - v) Briefly describe immunoprophylaxis of the disease.
- b) A 60 year old man presents to the hospital with huge progressive swelling of his right leg and scrotum for the last 3 months. On examination he is found to have inguinal lymphadenopathy, hydrocoele and non-pitting oedema on the right leg. What is the probable diagnosis? Name the causative organisms. Mention the vector for this disease. Describe the pathogenesis of this disease. How is the disease diagnosed in the laboratory? 1+2+1+4+7
2. a) Enumerate different morphological forms of organism causing kala azar. Briefly describe pathogenesis of Kala azar. Write a note on PKDL. 2+3+5
 - b) What are the members of Mycobacterium Tuberculosis Complex? Write about molecular methods used for diagnosis of tuberculosis. 3+7
 - c) Enumerate the bacteria causing sexually transmitted infections (STI) in humans. What are the methods for laboratory diagnosis of STIs? 4+6
3. Write short notes on following: 2 x 5
 - i) Madura foot.
 - ii) Gonococcal urethritis.
4. Explain the following statements: 5 x 4
 - i) Spontaneous or traumatic rupture of Hydatid cyst may prone to produce serious complications.
 - ii) Role of KOH mount in diagnostic mycology.
 - iii) Zoonotic diseases are responsible for major outbreaks of cases in humans.
 - iv) Beta hemolytic streptococcal infection has immunological consequences.
 - v) Smallpox virus is a good candidate for bioterrorism.

5. Choose the correct option for each of the following:

a) Post-streptococcal glomerulonephritis is detected by the following test:

- i) ASO titre
- ii) CAMP test.
- iii) Anti DNase-B antibody.
- iv) Bacitracin sensitivity

b) Find the true statement about 'Leptospirosis':

- i) Hepato Renal failure may occur in most of the untreated cases.
- ii) Latent and mild illness is not found
- iii) After 6 days of illness, the bacteria is not found in blood
- iv) ELISA test to detect Ab uses plates coated with *L. icterohaemorrhagiae* strain

c) All are nonfermenting gram negative bacilli except:

- i) *Acinetobacter*
- ii) *Hafnia*
- iii) *Stenotrophomonas*
- iv) *Elizabethkingia meningosepticum*

d) All are examples of tissue nematodes except:

- i) *Onchocerca volvulus*
- ii) *Mansonella ozzardi*
- iii) *Hymenolepis nana*
- iv) *Dracunculus medinensis*

e) Which of the following not a component of classical triad of congenital rubella syndrome-

- i) Limb hypoplasia
- ii) Sensory neural deafness
- iii) PDA
- iv) Salt and pepper retinopathy

f) Mycetoma having pink grain is caused by:

- i) *Madurella mycetomatis*
- ii) *Aspergillus nidulans*
- iii) *Nocardia* sp
- iv) *Actinomyces pelletieri*

g) The trivalent vaccine for influenza includes all except:

- i) A/H1N1
- ii) A/H5N1
- iii) Influenza B strain
- iv) A/H3N2

h) Receptor for SARS-Cov 2 is:

- i) ACE 2
- ii) CXCR
- iii) Sialylated glycan
- iv) CCR5

i) The most commonly used method for isolation of Chlamydia:

- i) Culture on artificial media
- ii) Culture on Vero cell-line
- iii) Inoculation into guinea pig
- iv) Culture on McCoy cell line

j) The mechanism of action of exotoxin of *Corynebacterium diphtheriae* is:

- i) Degradation of lecithin
- ii) Inactivation of the 60S ribosomal subunit
- iii) Intracellular protein ribosylation
- iv) Autoimmune activation by antigenic mimicry