

SS/MBBS-II/MIC-II/03-24**2024****(March)****MICROBIOLOGY****Paper-II****Full Marks: 100****Time: 3 hours****The figures in the margin indicate****full marks for the questions****Answer all questions**

1. A 6-year-old boy was brought to the emergency department with high grade fever, pain in the throat, difficulty in swallowing and breathing. On examination, the patient was found to be toxic and a white patch was found in the tonsillar area. 2+5+5+3=15

a. What is the probable clinical diagnosis and the aetiological agents?

b. Describe the pathogenesis of this condition.

c. Describe the laboratory diagnosis of this disease.

d. Discuss the management of this case.

2. What are the different types of subcutaneous mycoses and their aetiological agents? Describe the laboratory diagnosis of Eumycetoma. 2+3+5=10

3. Write short notes on/Justify/Give reasoning:

5×5=25

(a) VDRL is a non-specific test for diagnosis of syphilis

(b) Differentiate between tuberculoid and lepromatous leprosy.

(c) Many viruses are responsible for exanthematous fever

(d) Bacterial atypical pneumonia

(e) Differentiate between oral and injectable polio vaccines.

4. A 7-year-old boy was admitted to the critical care unit with high grade fever, headache, vomiting, altered mental status, seizure and neck rigidity. CSF sample collected by lumbar puncture was turbid in appearance and showed raised neutrophil count. 2+4+7+2=15

(a) What could be the probable diagnosis?

(b) Enumerate the most probable aetiological agents of this condition based on age distribution.

(c) Mention how you will proceed for laboratory diagnosis in detail.

(d) Write briefly about the preventive measures.

5. Enumerate different bacterial causes of sexually transmitted infections. Describe the laboratory diagnosis of gonococcal urethritis. 4+6=10

6. Define zoonosis. Enumerate the important parasites causing zoonosis. Describe the life cycle of any one such parasite. 1+4+5=10

7. Write briefly on "Right to make decisions for a patient who cannot determine for himself". 5

8. Choose the correct answer : 1x10=10

(i) Mechanism of action of tetanospasmin is due to

(a) inhibition of GABA release

- (b) inhibition of cAMP
 - (c) inactivation of acetylcholine receptor
 - (d) inhibition of cGMP
- (ii) Serotyping of meningococci is based on
- (a) outer membrane protein
 - (b) endotoxin
 - (c) capsular polysaccharide
 - (d) lipopolysaccharide
- (iii) Which of the following is not a common cause of neonatal meningitis?
- (a) *Escherichia coli*
 - (b) *Streptococcus agalactiae*
 - (c) *Listeria monocytogenes*
 - (d) *Streptococcus pneumoniae*
- (iv) If the gram-stain of CSF shows pleomorphic gram-negative capsulated coccobacilli, it is suggestive of
- (a) *Acinetobacter baumannii*
 - (b) *Haemophilus influenzae*
 - (c) *Escherichia coli*
 - (d) *Pseudomonas aeruginosa*
- (v) All of the following are human slow virus/prion disease, except
- (a) progressive multifocal leukoencephalopathy
 - (b) subacute sclerosing panencephalitis
 - (c) Creutzfeldt-Jakob disease

(d) Visna virus encephalitis

(vi) Plague is transmitted by

(a) louse

(b) soft tick

(c) hard tick

(d) rat flea

(vii) One definite host and two intermediate hosts are seen in

(a) *Schistosoma haematobium*

(b) *Diphylobothrium latum*

(c) *Echinococcus*

(d) Ascariasis

(viii) Epstein-Barr virus is implicated in the causation of

(a) infectious mononucleosis

(b) Burkitt's lymphoma

(c) nasopharyngeal carcinoma

(d) All of the above

(ix) The first mycobacterium discovered was

(a) *M. tuberculosis*

(b) *M. ulcerans*

(c) *M. leprae*

(d) *M. kansasii*

(x) Spore with drum stick appearance is produced by

- (a) Clostridium perfringens
- (b) Clostridium tetani
- (c) Clostridium bifermentans
- (d) Clostridium tertium

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