

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, DECEMBER-2024**MICROBIOLOGY****PAPER - SECOND****[Time allotted: Three hours]****SET - A****[Max Marks: 100]****Q. 1. Multiple choice questions (Darken the single best response in OMR sheet. Time allotted 20 minutes) (20 x 01 = 20)**

1. The infective dose of *Shigella* is:
 - a. 10-100 bacilli
 - b. 10^3 - 10^5 bacilli
 - c. 10^5 - 10^7 bacilli
 - d. 10^7 - 10^9 bacilli
2. The vector responsible for transmission of African sleeping sickness is:
 - a. Tsetse fly
 - b. *Culex* mosquito
 - c. *Aedes* mosquito
 - d. Rat flea
3. The Sabin-Feldman test has been used to diagnosis:
 - a. Toxoplasmosis
 - b. Leishmaniasis
 - c. Trypanosomiasis
 - d. Neurocytotoxicosis
4. The reservoir host for Japanese encephalitis is:
 - a. Monkey
 - b. Bird
 - c. Rodent
 - d. Sheep
5. Lancefield grouping of streptococci is based on:
 - a. Protein antigen
 - b. Carbohydrate antigen
 - c. Capsular antigen
 - d. Teichoic acid antigen
6. Owl's eyes appearance is associated with:
 - a. HSV 2
 - b. Herpes zoster
 - c. CMV
 - d. Tanapox
7. Which of the culture is **not** used in isolate *Haemophilus influenzae*:
 - a. Chocolate agar
 - b. MacConkey agar
 - c. Levinthal's media
 - d. Fildes' agar
8. Primary agents of pyogenic meningitis include all of the following **except**:
 - a. *Streptococcus pneumoniae*
 - b. *Haemophilus influenzae*
 - c. *Neisseria meningitidis*
 - d. *Moraxella catarrhalis*
9. The toxin responsible for pathogenicity of tetanus is:
 - a. Tetanolysin
 - b. Tetanospasmin
 - c. Peripherally acting neurotoxin
 - d. Alpha toxin
10. Scalded skin syndrome is mediated by:
 - a. Haemolysin
 - b. Coagulase
 - c. Enterotoxin
 - d. Epidermolytic toxin
11. CAMP test is useful in identification of:
 - a. *S. pyogenes*
 - b. *S. agalactiae*
 - c. *S. pneumoniae*
 - d. *Viridans streptococci*
12. Principle toxin responsible for gas gangrene is:
 - a. Alpha toxin
 - b. Theta toxin
 - c. Beta toxin
 - d. Delta toxin
13. Malignant pustule is a term used for:
 - a. An infected malignant melanoma
 - b. A carbuncle
 - c. A rapidly spreading rodent ulcer
 - d. Anthrax of the skin
14. Subacute sclerosing panencephalitis (SSPE) is a complication following which viral infection?
 - a. Mumps
 - b. Measles
 - c. Rubella
 - d. Influenza
15. Wrong about Bacterial vaginosis is:
 - a. Discharge has offensive smell
 - b. pH >4.5
 - c. Causative agent is *Chlamydia trachomatis*
 - d. Clue cell is diagnostic
16. Oocysts of *Toxoplasma gondii* are excreted in the feces of:
 - a. Cat
 - b. Sheep
 - c. Cattle
 - d. Humans
17. Anti-rabies vaccine is prepared from:
 - a. Street virus
 - b. Fixed virus
 - c. Live virus
 - d. Wild virus
18. Black Piedra is caused by:
 - a. *Piedraia hortae*
 - b. *Trichosporon beigelli*
 - c. *Trichosporon verrucosum*
 - d. *Microsporum gypseum*
19. The most common viruses that can cause meningoencephalitis in children are:
 - a. Arboviruses
 - b. Herpes Virus
 - c. JE Virus
 - d. Enterovirus
20. Negri bodies are seen in the following viral infection:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus

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Note: Attempt all questions in sequence.
Draw suitable diagrams (wherever necessary)

- Q. 2. Give reasons:** (5 x 2 = 10)
- Paul Bunnell test is a heterophile agglutination test.
 - Reactive IgM antibody test specific for syphilis in neonatal serum confirms the diagnosis of congenital syphilis.
 - Cotton swabs are not preferred for sample collection for diagnosis of gonorrhea.
 - Mycobacterium tuberculosis* is called acid-fast bacilli
 - The Salk vaccine does not provide herd immunity.
- Q. 3. Problem based question:** (4 x 2.5 = 10)
- A 17 year old boy was admitted to the hospital with complaints of high grade fever, headache, vomiting, altered sensorium, seizure and neck rigidity. On physical examination, it was observed that when his neck was passively flexed, his legs also flexed. Direct examination of the CSF showed gram-negative diplococci. Biochemical analysis of CSF showed glucose 10mg/dL, protein 250mg/dL with cell count of 1000 per cubic mm predominantly neutrophils (80%). Culture and sensitivity reports are awaited.
- What is the probable clinical diagnosis?
 - What is the most likely etiological agent?
 - Write down the pathogenesis of the above condition.
 - Describe the laboratory diagnosis of the condition in detail.
- Q. 4. Write briefly on:** (4 x 6 = 24)
- Laboratory diagnosis of urinary tract infection.
 - Subcutaneous mycosis.
 - Pathogenesis and laboratory diagnosis of Gas gangrene.
 - Discuss the rights and responsibilities of the laboratory personnel with respect to the confidentiality of laboratory results.
- Q. 5. Structured question:**
- (i) Name four most common etiological agents of bacterial pharyngitis. Describe the pathogenesis, clinical manifestations and laboratory diagnosis of diphtheria. (2+3+2+3=10)
- (ii) Tabulate the differences between *Orthomyxovirus* and *Paramyxovirus*. What do you mean by antigenic shift and antigenic drift? Describe the morphology of influenza virus. (4+3+3=10)
- Q. 6. Answer as indicated:** (4 x 4 = 16)
- What are zoonotic diseases? Give four examples.
 - Write a short note on cutaneous larva migrans.
 - Enumerate four common agents causing non-gonococcal urethritis.
 - Enumerate four common etiological agents of bacterial atypical pneumonia.
