

Time: Three Hours**Max. Marks: 100 Marks****MICROBIOLOGY – PAPER II (RS-4)****Q.P. CODE: 1031****(QP contains two pages)**

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS**2 x 10 = 20 Marks**

1. A 10 year old boy was brought to the OPD with high grade fever, productive cough with rusty sputum and difficulty in breathing for the past two days. Physical examination showed dull note on percussion. Microscopy of the sputum sample showed plenty of pus cells and gram positive, lanceolate diplococci surrounded by a halo
 - a) What is the clinical diagnosis of this condition and the most likely etiologic agent?
 - b) How will you confirm the etiologic agent in the laboratory?
 - c) Describe the virulence factors and the pathogenesis of the etiological agent
 - d) How will you manage this clinical condition?
2. A 7-month old baby was admitted to the hospital with complaints of high-grade fever, vomiting, seizure and neck rigidity. CSF sample was collected by lumbar puncture in a sterile container and sent to the laboratory for biochemical analysis, cell count and culture and sensitivity testing. Gram's stain revealed, gram negative diplococci
 - a) What is probable clinical diagnosis?
 - b) What are the etiological agents?
 - c) Pathogenesis of this disease
 - d) Describe the laboratory diagnosis in detail
 - e) What are the treatment modalities in this case?

SHORT ESSAYS**8 x 5 = 40 Marks**

3. Laboratory diagnosis of syphilis
4. Etiology and laboratory diagnosis of Lympho Granuloma Venereum (LGV)
5. Etiology, pathogenesis and lab diagnosis of Japanese B encephalitis
6. Standard precautions in health care delivery
7. Pathogenesis and laboratory diagnosis of Covid-19 disease
8. Pathogenesis and laboratory diagnosis of rabies
9. Pathogenesis and laboratory diagnosis of Toxoplasmosis
10. Laboratory diagnosis of Zygomycosis

SHORT ANSWERS**10 x 3 = 30 Marks**

11. Laboratory diagnosis of Neuro cysticercosis
12. Name three viruses producing inclusion bodies
13. Mention three complications caused by Zika virus during pregnancy
14. Mention three Oncogenic viruses and the malignant conditions caused by them
15. Laboratory diagnosis of Hydatid disease
16. Mention three deep Mycotic conditions and their causative agents
17. Etiology and laboratory diagnosis of Vincent's angina
18. A 46 year old man from Africa came to the OPD with abdominal pain, Hematuria and Dysuria. Urine culture showed no growth. Urine wet mount examination revealed oval non operculated eggs with terminal spine
 - a) What is the etiological diagnosis?
 - b) What is the definitive host and intermediate host?
19. Laboratory diagnosis of Trichomoniasis

Rajiv Gandhi University of Health Sciences, Karnataka

20. A 25 year old female came to the OPD with vaginal itching. On examination there was a white creamy discharge. The Gram's stain revealed gram positive budding yeast cells
- What is the probable diagnosis?
 - What is the specimen to be collected?
 - What are the common species of this yeast

Multiple Choice Questions

10 x 1 = 10 Marks

- 21 i) Which of the following statement about mumps is not correct
 - Bilateral Parotitis is the most common presentation
 - Other salivary glands are never involved
 - Atypical mumps presents as meningitis
 - Incubation period is about 19 days
- 21 ii) Which of the following statements concerning antigenic drift in influenza viruses is correct
 - It results in major antigenic changes
 - It is exhibited only by influenza A viruses
 - It is due to frame-shift mutations I viral genes
 - It occurs more frequently than antigenic shift
- 21 iii) Spore producing bacilli with drum stick appearance is seen in
 - C.bifermentans
 - C.perfringens
 - C.tetani
 - C.tertium
- 21 iv) Which of the following tumor is not caused by Epstein-Barr virus?
 - Post transplant lymphomas
 - Hodgkin's disease
 - Burkitt's lymphoma
 - Kaposi's sarcoma
- 21 v) Gloves are discarded in which of the following containers
 - Blue
 - Red
 - Yellow
 - Black
- 22 i) Which of the following is not a common cause of neonatal meningitis?
 - E.coli
 - S.agalactiae
 - Listeria monocytogenes
 - S.pneumoniae
- 22 ii) Survival of M. Tuberculosis inside the macrophages is due to
 - Inhibition of entry into the host cell
 - Inhibition of entry into the phagosome
 - Inhibition of phagosome - lysosome fusion
 - Inhibits degradation by lysosomal enzymes
- 22 iii) Which is not a property of S. Pneumoniae?
 - Bile solubility
 - Animal pathogenicity in mice
 - Grows in presence of 40% bile
 - Optochin sensitivity
- 22 iv) Production of early metachromatic granules can be seen best in which of the following media
 - Nutrient agar
 - Chocolate agar
 - Loeffler's serum slope
 - Potassium tellurite agar
- 22 v) Which of the following pattern of fever is seen in Brucellosis
 - Relapsing fever
 - Step ladder fever
 - Undulant fever
 - Pontiac fever
