

Q.P. Code:138005

Reg. No.....

**First Professional B.S.M.S Degree Regular/Supplementary Examinations
March 2026**

Nunnuyiriyal (Microbiology)

(2021 Scheme)

Time: 3 hrs

Max. 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 responses for MCQ questions (Q.No. i to Q.No. xx) shall be written continuously on the first two writing sheets (ie Page No. 3 & 4) only

- Who is credited with the development of antiseptic surgical techniques
a) Edward Jenner b) Louis Pasteur c) Joseph Lister d) Robert Koch
- Which of the following elements is NOT considered a macronutrient for bacteria
a) Carbon b) Nitrogen c) Iron d) Oxygen
- The presence of catalase enzyme in a bacterial culture can be tested by:
a) Adding hydrogen peroxide b) Adding Kovac's reagent
c) Adding phenol red d) Incubating at 37°C
- Which of the following is an example of a high-level disinfectant
a) Alcohol b) Quaternary ammonium compounds
c) Glutaraldehyde d) Chlorhexidine
- Which antibiotic is known to be effective against methicillin-resistant *Staphylococcus aureus* (MRSA)
a) Ampicillin b) Vancomycin c) Tetracycline d) Ceftriaxone
- What is the most common clinical manifestation of *Cryptococcus neoformans* infection
a) Pulmonary infection b) Skin infection
c) Meningitis d) Gastrointestinal infection
- What is the primary source of exposure to mycotoxins in food
a) Contaminated water b) Moldy grains and crops
c) Raw meat d) Fresh fruits
- Weil-Felix reaction is a serological test based on:
a) Heterophile antigen b) Specific antigen
c) Sheep brain antigen d) None of the above
- When a liquid medium contains a substance that inhibits all unwanted bacteria but stimulates the growth of particular bacteria, it is known as:
a) Transport medium b) Enrichment medium
c) Enriched medium d) None of the above
- Which medium is considered the best for Antimicrobial Susceptibility Testing (AST) of bacterial isolates
a) Nutrient agar b) MacConkey agar
c) Mueller-Hinton agar d) Blood agar
- Microconidia are absent in which of the following dermatophytes
a) *Trichophyton mentagrophytes* b) *Epidermophyton floccosum*
c) *Microsporum canis* d) *Trichophyton rubrum*

(PTO)

- xii. Which of the following fungi is considered non-cultivable
 - a) Rhinosporidium seeberi
 - b) Candida albicans
 - c) Acremonium
 - d) Sporothrix
- xiii. Which of the following tests is commonly used to identify Enterococcus species in the laboratory
 - a) Coagulase test
 - b) Catalase test
 - c) Lancefield classification
 - d) Bile esculin test
- xiv. Which of the following cancers is most commonly associated with Pyrexia of unknown origin
 - a) Colon cancer
 - b) Breast cancer
 - c) Prostate cancer
 - d) Lymphoma
- xv. What type of cells do Rickettsia bacteria primarily infect
 - a) Erythrocytes
 - b) Epithelial cells
 - c) Endothelial cells
 - d) Hepatocytes
- xvi. Viruses that do not cause cytopathic effects are often detected using which of the following techniques
 - a) Microscopy
 - b) Hemadsorption
 - c) Gram staining
 - d) Crystal violet staining
- xvii. Combined active and passive immunization is often undertaken in
 - a) Rabies
 - b) Tetanus
 - c) Diphtheria
 - d) All the above
- xviii. HPV (Human Papilloma Virus) types 6 and 11 are primarily associated with which condition
 - a) Cervical cancer
 - b) Genital warts
 - c) Oral cancer
 - d) Anal cancer
- xix. Which of the following is a common symptom of filovirus infection
 - a) Rash
 - b) Severe headache
 - c) Hemorrhagic fever
 - d) Jaundice
- xx. The mechanism of action of Remdesivir, an antiviral drug used for treating COVID-19, primarily involves which of the following
 - a) Inhibition of viral fusion
 - b) Inhibition of RNA polymerase
 - c) Inhibition of viral protease
 - d) Inhibition of reverse transcriptase

Short Answer Questions

(8x5=40)

2. Describe the structure and function of the bacterial flagella and discuss its role in pathogenicity.
3. Classify the different types of immunoglobulins and explain the general structure of an antibody.
4. Describe the morphology and opportunistic infections associated with the human immunodeficiency virus (HIV).
5. Outline the procedure and significance of the Elek's Gel precipitation test.
6. Explain the procedures involved in the collection, segregation, and disposal of biomedical waste.
7. Discuss in detail the infections of Streptococcus pyogenes.
8. Define nosocomial infections and list the organisms and preventive measures for controlling them.
9. List Opportunistic fungal infections, and explain about Moniliasis.

Long Answer Questions

(4x10=40)

10. Define and classify immunity. Explain the mechanisms involved in nonspecific immunity.
11. Describe the morphology, cultural characteristics, pathogenesis, and laboratory diagnosis of Clostridium perfringens.
12. List the arboviruses prevalent in India, Explain the pathogenesis and Lab diagnosis of Dengue virus.
13. Explain the methods of gene transfer in bacteria.
