

Q.P. Code:138005

Reg. No.....

**First Professional B.S.M.S Degree Supplementary Examinations
December 2024**

**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 Answers to 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 was the first to propose the use of vaccines to combat disease
a) Edward Jenner b) Louis Pasteur c) Joseph Lister d) Robert Koch
- Which type of organism requires organic compounds for carbon and energy
a) Autotrophs b) Heterotrophs c) Chemolithotrophs d) Photoautotrophs
- Which of the following bacteria is known to be catalase-positive
a) Streptococcus pyogenes b) Staphylococcus aureus
c) Clostridium botulinum d) Enterococcus faecalis
- What is the primary mechanism of action for aminoglycosides
a) Inhibition of cell wall synthesis b) Inhibition of protein synthesis
c) Inhibition of nucleic acid synthesis d) Disruption of membrane integrity
- Which mycotoxin is associated with liver damage and carcinogenic effects
a) Zearalenone b) Aflatoxin c) Ochratoxin d) Trichothecene
- Which of the following immune cells primarily recognize antigens
a) Red blood cells b) Neutrophils c) T cells d) Platelets
- Which of the following bacteria is known for producing a blue-green pigment
a) Escherichia coli b) Pseudomonas aeruginosa
c) Salmonella typhi d) Bacillus cereus
- What is the primary mechanism of action for alcohol as a disinfectant
a) Oxidation of proteins b) Disruption of cell membranes
c) Precipitation of nucleic acids d) Enzyme inhibition
- How are Enterococcus species primarily transmitted
a) Airborne transmission b) Direct contact with infected surfaces
c) Fecal-oral route d) Blood borne transmission
- Which serovars of Chlamydia trachomatis are responsible for causing trachoma
a) Serovars A, B, Ba, C b) Serovars D-K
c) Serovars L1, L2, L3 d) Serovar G
- Albert stain is an example for
a) Special Stain b) Acid fast stain c) Negative stain d) Simple stain
- Rickettsia prowazekii is primarily transmitted by which of the following vectors
a) Mosquito b) Louse c) Flea d) Tick
- Which of the following vaccines is recommended for preventing cervical cancer
a) Hepatitis A vaccine b) Varicella vaccine
c) Meningococcal vaccine d) Human Papillomavirus (HPV) vaccine
- Satellitism is most commonly exhibited by which of the following bacterial genera
a) Escherichia b) Staphylococcus
c) Haemophilus d) Streptococcus

(PTO)

- xv. What is the primary clinical syndrome associated with acute Epstein Barr Viral infection
 - a) Infectious mononucleosis b) Meningitis
 - c) Hepatocellular carcinoma d) German measles
- xvi. Draughtsman colony is a characteristic feature of
 - a) Streptococcus pyogenes b) Enterococci
 - c) Streptococcus pneumoniae d) All the above
- xvii. The shape of the smallpox virus is best described as
 - a) Helical b) Spherical c) Brick-shaped d) Rod-shaped
- xviii. Cowdry type A inclusions are primarily associated with which virus
 - a) Cytomegalovirus (CMV) b) Herpes simplex virus (HSV)
 - c) Influenza virus d) HIV
- xix. Which of the following tests is used to differentiate Proteus mirabilis from Proteus vulgaris
 - a) Urease test b) Indole test c) Lactose fermentation test d) Oxidase test
- xx. Which of the following is a characteristic symptom of rubella
 - a) Koplik spots b) Parotitis c) Maculopapular rash d) Jaundice

Short Answer Questions

(8x5=40)

2. Describe the structure and function of the bacterial cell wall.
3. List the different antigen-antibody reactions and explain the types of ELISA (Enzyme-Linked Immunosorbent Assay).
4. Discuss immunodeficiency disorders.
5. Explain bacillary dysentery, including its causes, clinical presentation, and diagnosis.
6. Describe the pathogenesis and clinical features of pulmonary tuberculosis.
7. Discuss the infections caused by Herpes simplex virus-1 (HSV-1).
8. Explain the pathogenesis and laboratory diagnosis of aseptic meningitis.
9. Explain the causes, pathogenesis, and clinical features of black fungal disease.

Long Answer Questions

(4x10=40)

10. Define and classify hypersensitivity. Explain Type IV hypersensitivity in detail.
11. Describe the morphology, cultural characteristics, pathogenesis, and laboratory diagnosis of Bacillus anthracis.
12. Discuss the morphology, pathogenesis, laboratory diagnosis, and opportunistic infections associated with the Human Immunodeficiency Virus (HIV), and provide a note on its management.
13. Classify culture media, explain in detail about Anaerobic culture methods.
