

B.Sc. (Nursing) DEGREE EXAMINATION
THIRD SEMESTER
PAPER VI – APPLIED MICROBIOLOGY
AND INFECTION CONTROL INCLUDING SAFETY
Q.P. Code: 652308

Time : Three Hours

Maximum : 75 Marks

Answer Section A and Section B Separately

Answer all the Questions

SECTION – A (37 Marks)
(APPLIED MICROBIOLOGY)

I. Multiple Choice Questions:

(6 x 1 = 6)

Choose one correct answer in the Answer Script. No overwriting should be done. Choice should be given in Capital Letters.

1. Rabies is transmitted by all route EXCEPT:
A) Dog bite B) Cat bite C) Inhalation D) Ingestion
2. Enteric fever in first week of illness is diagnosed by?
A) Widal test B) Blood culture C) Urine culture D) Stool culture
3. Dengue is transmitted by
A) Aedes aegypti Mosquito B) Anopheles Mosquito
C) Mite D) Culex Mosquito
4. Which of the following virus is Oncogenic?
A) Corona virus B) Hepatitis B virus C) Rabies virus D) Influenza virus
5. The LPCB Mount preparation done for
A) Bacterial infection B) Viral infection C) Helminthic infection D) Fungal infection
6. Perianal pruritus is seen in which infection?
A) Pin worm B) Whip worm C) Hook worm D) Round worm

II. Essay:

(1 x 10 = 10)

1. Describe in detail about Bacterial cell wall. Write a note about Gram Staining.

III. Short answer:

(3 x 5 = 15)

1. Laboratory diagnosis of fungal infection.
2. Pathogenesis and Laboratory diagnosis of Corona virus infection.
3. General Structure of Antibody.

IV. Very short answers:

(3 x 2 = 6)

1. Selective Media.
2. Enumerate the Nematodes that causing human infection.
3. Amoebic liver abscess.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[BSCN 1024]

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Sub. Code: 2308

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Answer all the Questions

SECTION – A (37 Marks)

(APPLIED MICROBIOLOGY)

I. Multiple Choice Questions:

(6 x 1 = 6)

1. Organ of locomotion in bacteria is
A) Slime layer B) Flagella C) Fimbria D) Capsule
2. Human anatomical waste is disposed in which color-coded bag:
A) Yellow bag B) Red bag C) Blue bag D) White bag
3. Which antibody appears first after infection?
A) IgA B) IgG C) IgE D) IgM
4. Western blot is confirmatory test for:
A) Hepatitis B B) HIV C) Syphilis D) Leptospirosis
5. Primary amoebic meningoencephalitis is caused by
A) Acanthamoeba B) Balamuthia C) Naegleria D) E.histolytica
6. Predisposing factors for fungal infection are all EXCEPT
A) Post transplantation B) Neutropenia
C) Malignancy D) Immunocompetent state

II. Essay:

(1 x 10 = 10)

1. Write in detail about morphology, pathogenesis and laboratory diagnosis of Vibrio cholera.

III. Short answer:

(3 x 5 = 15)

1. Life cycle of Malarial parasites.
2. Dengue virus.
3. ELISA.

IV. Very short answers:

(3 x 2 = 6)

1. Modes of transmission of Hepatitis viruses.
2. Enumerate various types of hypersensitivity reaction.
3. Enumerate opportunistic fungal pathogens.

SECTION – B (38 Marks)
(INFECTION CONTROL INCLUDING SAFETY)

I. Multiple choice Questions: **(7 x 1 = 7)**

1. Geobacillus stearothermophilus bacteria is used as biological indicator in
A) Hot air oven B) Autoclave C) Incubator D) Filtration
2. Stents is sterilized by
A) Glutaraldehyde B) Autoclave C) Hot air oven D) Ethylene oxide sterilizer
3. How many moments for hand hygiene as per WHO recommendation?
A) 8 B) 5 C) 6 D) 4
4. All of the following are component of droplet infection except
A) N-95mask B) Cohorting C) Respiratory hygiene D) Restricted visitors
5. Blood bags should be collected in which colour bag?
A) Yellow B) Red C) Blue D) White
6. The following chemical is high level disinfectant
A) Hypochlorite solution B) Phenol C) Chlorhexidine D) Peracetic acid
7. Hand wash should be performed for atleast
A) 20 seconds B) 30 seconds C) 40 seconds D) 10 seconds

II. Essay: **(1 x 10 = 10)**

1. Define sterilization. Enumerate various physical methods of sterilization. Discuss in detail about Autoclave and its various sterilization control.

III. Short answers: **(3 x 5 = 15)**

1. Hand hygiene.
2. Airborne infection control measures.
3. Needle stick injury.

IV. Very short answers: **(3 x 2 = 6)**

1. What is the various Health Care Associated Infection?
2. Fire safety.
3. Blood spill management.

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**THIRD SEMESTER
APPLIED MICROBIOLOGY AND INFECTION CONTROL
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Q.P. Code: 652308

Time : Three Hours

Maximum : 75 Marks

Answer Section A and Section B Separately

Answer all the Questions

SECTION – A (37 Marks)

(APPLIED MICROBIOLOGY)

I. Multiple Choice Questions:

(6 x 1 = 6)

1. Antistreptolysin O titre (ASO titre) is useful for the diagnosis of
A) Pyogenic meningitis B) Staphylococcal food poisoning
C) Rheumatic fever D) Trachoma
2. Widal test is done for diagnosis of
A) Klebsiella pneumoniae B) Haemophilus influenza
C) Salmonella typhi D) Mycobacterium ulcerans
3. VDRL Test is useful for diagnosis of
A) Malaria B) Syphilis C) Typhoid fever D) Leprosy
4. Vaccination is based on the principle of
A) Phagocytosis B) Immunological memory
C) Clonal detection D) Agglutination reaction
5. Mantoux test is based on
A) Immediate type hypersensitivity B) Immune complex mediated hypersensitivity
C) Delayed hypersensitivity D) Cytotoxic reaction
6. Which of the following is a killed Vaccine
A) Sabin's Oral Polio Vaccine B) Salk's injectable Polio Vaccine
C) BCG vaccine for TB D) MMR Vaccine

II. Essay:

(1 x 10 = 10)

1. Enumerate the organisms causing Respiratory Tract Infection. Describe the laboratory diagnosis of Tuberculosis.

III. Short answer:

(3 x 5 = 15)

1. Bacterial Cell Structure.
2. National Immunization Schedule.
3. Describe the methods for cultivation of viruses.

IV. Very short answers:

(3 x 2 = 6)

1. Koch's Postulates.
2. Prokaryotes.
3. Herd immunity.

SECTION – B (38 Marks)
(INFECTION CONTROL INCLUDING SAFETY)

I. Multiple choice Questions:

(7 x 1 = 7)

1. The concentration of glutaraldehyde used in high-level disinfection is
A) 0.5% B) 1% C) 1.5% D) 2%
2. Which of the following is a post-exposure vaccine
A) Polio vaccine B) MMR vaccine C) Rabies vaccine D) Hepatitis B vaccine
3. The first step in donning a personal protective equipment is
A) Wearing Mask B) Wearing Gown C) Wearing Gloves D) Wearing Face shield
4. Ethylene oxide (EO) Sterilization is used for sterilization of
A) Heart Lung machine B) Clinical Thermometer
C) Operation Theater D) Stethoscope
5. The first step for triage is to
A) Take care of the worst looking victim first B) Stop, look, listen and think
C) Start where you stand D) Conduct voice triage
6. Tyndallisation is a type of
A) Intermittent sterilization B) Chemical Disinfectant
C) Pasteurization D) Autoclaving
7. What is the leading causes of deaths due to Hospital Acquired Infection in India
A) Wound Infections B) Pneumonia
C) Venereal diseases D) Urinary Tract Infections

II. Essay:

(1 x 10 = 10)

1. What is Antimicrobial Stewardship Programme? Describe how the programme can be implemented and monitored in hospital.

III. Short answers:

(3 x 5 = 15)

1. Needle stick injury prevention methods.
2. Recommendations for Vaccination of Health Care Professionals.
3. Moist heat sterilization.

IV. Very short answers:

(3 x 2 = 6)

1. Hand Rub.
2. List four infections transmitted by contact in Hospital.
3. Sample collection method for COVID.

[BSCN 0525]

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SECTION – A (37 Marks)

(APPLIED MICROBIOLOGY)

I. Multiple Choice Questions:

(6 x 1 = 6)

- Which one of the following is the Gram-positive organism
A) Streptococcus pneumoniae
B) Escherichia coli
C) Pseudomonas aeruginosa
D) All of the above
- Meningitis with rash is caused by
A) Neisseria meningitides
B) Haemophilus influenza
C) Streptococcus agalactiae
D) Brucella abortus
- Cold agglutination test is useful for diagnosis of
A) Relapsing fever
B) Primary atypical pneumonia
C) Bacillary dysentery
D) Weil's disease
- An example for Active Immunity is
A) Immunization with DPT vaccine
B) Transfer of antibodies from mother
C) Antiserum Injections
D) None of the above
- Darting motility is shown by
A) Escherichia coli
B) Streptococcus pneumonia
C) Bacillus anthracis
D) Vibrio cholera
- VDRL Test is useful for diagnosis of
A) Malaria
B) Typhoid fever
C) Syphilis
D) Leprosy

II. Essay:

(1 x 10 = 10)

- Enumerate the organisms causing Urinary Tract Infection. Describe the laboratory diagnosis of Urinary Tract infection.

III. Short answer:

(3 x 5 = 15)

- Bacterial Growth Curve.
- Anaphylaxis.
- Gram's staining.

IV. Very short answers:

(3 x 2 = 6)

- Cold chain.
- Pulse Polio Programme.
- Amoebiasis.

SECTION – B (38 Marks)
(INFECTION CONTROL INCLUDING SAFETY)

I. Multiple choice Questions: **(7 x 1 = 7)**

1. Surgical site infections are the infections that develop at the surgical site within
A) 2 days of surgery B) 14 days of surgery
C) 30 days of surgery D) One year of surgery
2. The following is the chairman of the Hospital Infection Control Committee
A) Hospital Infection Control Nurse B) Head of Department of Medicine
C) Medical superintendent D) Person in-charge of Medical Records
3. The first step in donning a personal protective equipment is
A) Wearing Mask B) Wearing Gown C) Wearing Gloves D) Wearing Face shield
4. Ethylene oxide (EO) Sterilization is used for sterilization of
A) Heart Lung machine B) Clinical Thermometer
C) Operation Theater D) Stethoscope
5. Incineration is useful for the disposal of
A) Anatomical waste B) Infectious plastic waste
C) Liquid waste D) All of the above
6. NIH Swab is useful for
A) Diagnosis of Diphtheria B) Diagnosis of Pin worm infection
C) Detection of Typhoid carrier D) Collection of pus sample from wound
7. According to the latest Biomedical Waste Management guidelines, plastic infectious waste should be segregated in
A) Yellow bags B) Red bags C) White bags D) Blue containers

II. Essay: **(1 x 10 = 10)**

1. Define the term Sterilization and disinfection. How do you classify Sterilization methods? Write in detail about Physical Methods of Sterilization.

III. Short answers: **(3 x 5 = 15)**

1. Spaulding's classification.
2. Describe the components of International Patient Safety Goals (IPSG).
3. What are the factors influencing the Hospital Acquired Infections?

IV. Very short answers: **(3 x 2 = 6)**

1. Significant Bacteriuria.
2. Air embolism.
3. ISBAR.
