

Paper Code-030801

B.Sc. Nursing 3rd Semester Annual University Examination

Subject-Applied Microbiology and Infection Control including Safety

Time Allowed: Three Hours

Maximum Marks:-75

Note:

- The candidates must limit their answers to the answer book (50 pages) issued to them. No supplementary Continuation answer sheet shall be provided.
- Illustrate your answers with suitable diagrams, graphs and flow charts.
- Attempt MCQ in OMR Sheets.
- OMR Sheets shall be collected 15 minutes after starting of Examination.

Applied Microbiology- Section –A

Total -13 Marks

Q.1 MCQ:

13X1 Marks=13

1.1 Who is considered father of modern microbiology?

- (a) Louis Pasteur (b) John Tyndall (c) Robert Koch (d) Edward Jenner

1.2 Bacteria that are unable to synthesize their own food material are called:

- (a) Chemoautotrophs (b) Heterotrophs (c) Saprotrophs (d) Parasites

1.3 Which of the following cocci bacteria is Gram- negative?

- (a) Staphylococcus (b) Streptococcus (c) Enterococcus (d) Neisseria

1.4 Which of the following causes gas gangrene?

- (a) Clostridium tetani (b) Clostridium perfringens
(c) Clostridium botulinum (d) All of the above

1.5 The substance which causes a rise in body temperature is called:

- (a) Allergen (b) Pyrogen (c) pathogen (d) All of the above

1.6 One of the following is not live vaccine?

- (a) Pertussis (b) BCG (c) Oral Polio (d) Measles

1.7 Presence of pathogenic bacteria in the blood is known as:

- (a) Bacteremia (b) Septicemia (c) Toxemia (d) All of the above

1.8 Physician induced infection from therapeutic or surgical procedure is called:

- (a) Typical infection (b) Acute infection (c) Iatrogenic infection (d) Generalized infection

1.9 Which vaccination should be given to workers who deal with biomedical waste?

- (a) HBsAg (b) tetanus (c) Rabies (d) Both a & b

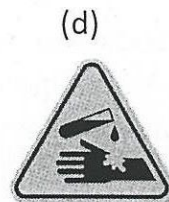
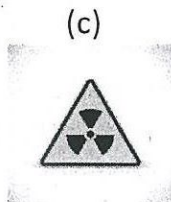
1.10 Cytotoxic and expired drugs are disposed of. by:

- (a) Dumping (b) Autoclave (c) Incineration (d) Chemical Disinfection

1.11 Chemical substance that destroys all microorganisms including spores is called:

- (a) Sterilant
- (b) Disinfectant
- (c) Sanitizer
- (d) Germicide

1.12 Which of the following is symbol of Bio hazard?



1.13 Sterilization of disposable syringes are carried out by:

- (a) Hot air oven
- (b) Glutaraldehyde
- (c) Ethylene oxide
- (d) Tantalization

Section-B Applied Microbiology

Total-31 Marks

Q.2 Long/ Essay Question

1X10 Marks=10

Define and classify the immunity. Explain the mechanism of specific immunity.

Q.3 Short Questions.

(3X5 Marks=15)

- a) Write a note on Widal test.
- b) Classify the culture media.
- c) Describe the Gram staining.

Q. 4 Very Short Answer Questions.

(3X2 Marks=6)

- a) Write the morphological classification of bacteria.
- b) Write the factors influencing growth of microorganisms.
- c) Write the types of immunoglobulin.

Section –C Infection Control Including Safety

Total -31 Marks

Q.5 Long/ Essay Question

(1X10 Marks=10)

Define needle stick injury? How to prevent needle stick injury? Write post exposure prophylaxis and management for needle stick injury.

Q.6 Short questions on **any three**

(3X5 marks=15)

- a) Write the sources and mode of infection transmission.
- b) Briefly explain International Patient safety Goals.
- c) Principles of specimen collection.
- d) Briefly discuss about HAI

Q.7 Very Short Answer Questions.

(3X2Marks=6)

- a) Write the Colour coding for waste containers?
- b) Prevention of MRSA.
- c) Write a note on PPE.

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Q1. MCQ

Section –A

Total -13 Marks

1.1 Study of fungi is called?

- (a) Parasitology
- (b) Mycology
- (c) Phycology
- (d) Microbiology

1.2 Wound Born infection is

- (a) Tetanus
- (b) Cholera
- (c) Influnza
- (d) Rabies

1.3 Which infection results in Pus formation?

- (a) Skin infection
- (b) Acute infections
- (c) Pyogenic
- (d) Chronic infection

1.4 BCG Vaccine is advised at an age of:

- (a) At birth
- (b) 5 to 6 years
- (c) 9 months
- (d) 10 weeks

1.5 Method of transmission of Syphilis:

- (a) Respiratory
- (b) Sexually Transmitted
- (c) Feco-Oral
- (d) None of the above

1.6 Which of the following viruses is transmitted by Dog Bite ?

- (a) Rabies Virus
- (b) Hepatitis A
- (c) Hentaviruses
- (d) Rota virus

1.7. Causative organism of urinary tract infection?

- (a) Pneumococcus
- (b) Coronebacterium
- (c) Streptococcus aureus
- (d) Escherichia Coli

1.8 Which is the most blood transfusion associated hepatitis?

- (a) Hepatitis A
- (b) Hepatitis B
- (c) Hepatitis D
- (d) Hepatitis E

1.9 Long term immobilization can cause development of?

- (a) DVT
- (b) Pulmonary embolism
- (c) hospital acquired infection
- (d) Septicemia.

1.10 Steaming at 100° C for 3 successive days is called?

- (a) Tyndallization
- (b) Autoclave
- (c) Incineration
- (d) Sterilization

1.11 Which Immunoglobulin crosses Placenta?

- (a) IgA
- (b) IgE
- (c) IgG
- (d) IgM

1.12 About 40 % of hospital acquired infection occurs in?

- (a) Urinary tract
- (b) Respiratory tract
- (c) Gastro intestinal tract
- (d) Reproductive tract

1.13 Body fluid and anatomical parts are discarded in?

- (a) Red container
- (b) Black container
- (c) Yellow container
- (d) Blue container

Section-B (Applied Microbiology)

Total-31 Marks

Q.2 Describe the morphology, pathogenesis and lab diagnosis of treponema pallidum. (10)

Q.3 Short questions (3X5 =15)

- (a) Differentiate the endotoxin and exotoxin.
- (b) Mantoux test.
- (c) Classification of bacteria.

Q. 4 Very Short Answer Questions. (3X2=6)

- (a) Write the types of sterilization.
- (b) Describe type of Immunoglobulin?
- (c) What is opportunistic infection?

Section-C (Infection Control Including Safety)

Total -31 Marks

Q.5 Describe the role of nurse in infection control programme. What are the responsibilities while handling the patient specimen? (10)

Q.6 Short questions (3X5=15)

- (a) Explain the standard safety measures.
- (b) Explain the laboratory diagnosis of typhoid.
- (c) Universal immunization programme.

Q.7 Very Short Answer Questions. (3X2=6)

- (a) Role of nurse in disaster.
- (b) Nosocomial infection.
- (c) Standard safety measures.

Paper Code-030801

B. Sc. Nursing 3rd Semester Regular/reappear University Examination June 2024
Subject-Applied Microbiology & Infection Control Including Safety

Time Allowed: Three Hours

Maximum Marks:-75

Note:

- The candidates must limit their answers to the answer book (60 pages) issued to them. No supplementary Continuation answer sheet shall be provided.
- Illustrate your answers with suitable diagrams, graphs and flow charts.
- Attempt Section-A (MCQ) in OMR Sheets and Section-B & C in 60 Pages answer sheet.
- OMR Sheets shall be collected 15 minutes after starting of Examination.

Section -A

Q1. MCQ

13X1 Marks=13

- 1.1. Extra chromosomal material of DNA in the bacteria is known as:
- (a) Bacteriophage
 - (b) Spores
 - (c) Plasmid
 - (d) Cosmid
- 1.2. Specimen to be collected depends on:
- (a) Knowledge about the site from having maximum number of organisms
 - (b) Easily available site on a body
 - (c) According to patient's comfort
 - (d) Randomly selected
- 1.3. Enrich media is:
- (a) Used to grow fastidious bacteria
 - (b) Used to grow non-fastidious bacteria
 - (c) Both (a) & (b)
 - (d) None of the above
- 1.4. _____ is not an antimicrobial drug that is added in the culture media for the isolation of *Neisseria gonorrhoeae*:
- (a) Penicillin
 - (b) Vancomycin
 - (c) Amphotericin
 - (d) Colistin
- 1.5. *Listeria monocytogenes* is a _____ that can grow in warm and cold temperature.
- (a) Bacterium
 - (b) Virus
 - (c) Fungus
 - (d) Plant
- 1.6. Which of the following HPV viruses are known to cause cervical cancer?
- (a) Viruses of all 5 clades
 - (b) Types 14, 16, 18, 31, 45
 - (c) None are oncogenic per se
 - (d) Types 1-180
- 1.7. The highest percentage of HAIs is constituted by:
- (a) Blood borne infections
 - (b) Surgical site infections
 - (c) UTIs
 - (d) Respiratory infections
- 1.8. To perform the two-minute hand wash:
- (a) Rinse thoroughly for one minute, then wash with soap for one minute
 - (b) Wash one minute, rinse thoroughly, relather, and wash another minute
 - (c) Wash for a minute and a half, and rinse thoroughly for a half minute
 - (d) None of the above

1.9. Which dye is used in Seitz bath?

- (a) Potassium permanganate
- (b) Potassium dichromate
- (c) Crystal violet
- (d) Gentian violet

1.10. How are the gauze and cotton sterilized?

- (a) Hot air sterilization
- (b) Wet heat sterilization
- (c) Sterilization under High Pressure
- (d) Chemical Sterilization

1.11. The biological products, like serum, antibiotics, and urea are sterilized by:

- (a) Moist heat
- (b) Radiation

(c) Filtration

(d) Dry heat

1.12. Transport media used for transferring throat, nasal or vaginal swab is:

- (a) Nutrient broth
- (b) Blood agar
- (c) Stuart's medium
- (d) All of these

1.13. Which antibiotic is not clinically useful for *Pseudomonas aeruginosa* infection?

- (a) Aminoglycosides
- (b) Ceftazidime
- (c) Piperacillin
- (d) Trimethoprim- sulfamethoxazole

Applied Microbiology– Section – B

Q2. Enumerate opportunistic Mycosis and write about the, pathogenesis, clinical significance, laboratory diagnosis of the candidiasis. (10)

Q3. Short Question :-

- a) laundry management
- b) Immunization schedule
- c) Principles of Microbiology

(3X5 Marks =15)

Q4. Very short Answer Questions:

- a) Tissue culture
- b) Mantoux Test
- c) ELISA (Enzyme Linked Immunosorbent assay)

(3X2 Marks=6)

Infection Control Including Safety- Section – C

Q5. Define Healthcare- associated infections (HAIs), innumerate major type of HAIs. Discuss catheter – associated infection (CAUTI) in detail including its prevention and control. (10)

Q6. Short Question:

- a) Role of infection control committee
- b) Prevention of MRSA
- c) Prevention of infection according to CDC guidelines

(3X5 Marks =15)

Q7. Very short Answer Questions:

- a) Material safety data sheets (MSDS)
- b) Bacterial capsule
- c) Radiation safety

(3X2 Marks =6)

B. Sc. Nursing 3rd Semester Regular/reappear University Examination March, 2025
Applied Microbiology and Infection Control including Safety

Time : 3 Hours

Max Marks: 75 Marks

Instructions :

- The candidate must limit their answers to the answer book (60 pages) issued to them. No supplementary continuation answer sheet will be provided.
- Illustrate your answers with suitable diagrams, graphs and flow charts.
- Attempt Section-A (MCQs) in OMR sheet and Section-B in 60 Pages answer book.
- OMR sheet shall be collected 15 minutes after starting of examination.

[Section-A] (MCQ)

[13X1=13]

Q1. Typhoid is also known as

- (a) Pneumonic fever
- (b) Hepatic fever
- (c) Enteric fever
- (d) Vesical fever

(d) Both 1 & 2

Q2. Which of the following is a Subunit Vaccine?

- (a) Hepatitis-B Vaccine
- (b) MMR Vaccine
- (c) Influenza Vaccine
- (d) Diphtheria toxoid vaccine

Q6. What is the term for the process by which Micro-organism move towards away from stimulus?

- (a) Taxis
- (b) Kinesis
- (c) Chemotaxis
- (d) Phototaxis

Q3. Which of the following bacteria is responsible for causing Lyme Disease?

- (a) Treponema pallidum
- (b) Leptospira interrogans
- (c) Borrelia burgdorferi
- (d) Rickettsia

Q7. The microorganism that grow best in a low oxygen is called

- (a) Aerobe
- (b) Anaerobe
- (c) Facultative
- (d) Microaerophile

Q4. What is the term for the process by which Micro-organism are able to develop resistance to antimicrobial agents?

- (a) Adaptation
- (b) Mutation
- (c) Natural selection
- (d) Genetic drift

Q8. The third step of Stepwise approach is

- (a) Implementation
- (b) Facility preparedness
- (c) Ongoing planning & Review cycle
- (d) Baseline Evaluation

Q5. Which of the following is Gram Positive Bacterium?

- (a) Actinomyces
- (b) Clostridium
- (c) Rhizobium

Q9. Who is Father of "Hand Hygiene"?

- (a) Antony Van
- (b) Paul Ehrlich
- (c) Gammas Philip Semmelweis
- (d) Alexander Fleming

Q10. Kelsey and Sykes test is an a: -

- (a) In-use method
- (b) Suspension method
- (c) Carrier method
- (d) Capacity method

Q11. A patient requires nasotracheal suction. The patient is receiving medical treatment for Mycoplasma pneumonia. Select the PPE you would wear for this procedure?

- (a) Gloves & Mask
- (b) Gloves, Gown, googles & Mask
- (c) Goggles & Mask
- (d) Gloves & googles

Q12. The place where the Micro-organism resides, thrives and reproduce is called?

- (a) Infectious agent
- (b) Reservoir
- (c) Carrier
- (d) None of these

Q13. What type of protection is needed when you are exposed to hazards from flying particles?

- (a) Eye protection
- (b) Face protection
- (c) Head protection
- (d) Both 1 & 2

[Section-B]

[62.0 Marks]

Q1. Long/Essay Questions:

[20.0]

1.1. Describe the Morphological, General features, modes of transmission and Pathogenicity of the Leprosy pathogen?

[10.0]

1.2. What is Moist Heat Sterilization? Explain the techniques of Moist Heat sterilization using Saturated steam under pressure. Explain its principle?

[10.0]

Q2. Short Question:

[30.0]

2.1. Classify the Leptospira's?

[5.0]

2.2. Structure of Influenza viruses?

[5.0]

2.3. Laboratory diagnosis of Candidiasis?

[5.0]

2.4. Difference between Isolation and Quarantine.

[5.0]

2.5. Advantages of Alcohol or Disinfectants?

[5.0]

2.6. Medical Asepsis & its Processes?

[5.0]

Q3. Very short Answer Questions:

[12.0]

3.1. RT-PCR

[2.0]

3.2. Tuberculin test

[2.0]

3.3. Immunoglobulins

[2.0]

3.4. Write down Seven steps of Biomedical waste management.

[2.0]

3.5. Write down 4P's Approach used widely by the caregivers.

[2.0]

3.6. Steps of Root Cause Analysis (RCA)

[2.0]
