



**BRAINWARE UNIVERSITY**  
**Term End Examination 2020 - 21**  
**Programme – Master of Science in Microbiology**  
**Course Name – Medical Bacteriology**  
**Course Code - MMB302**

**Semester / Year - Semester III**

Time allotted : 75 Minutes

Full Marks : 60

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

**Group-A**

(Multiple Choice Type Question)

1 x 60=60

1. *(Answer any Sixty)*

(i) The identification of bacteria by serologic tests is based on the presence of specific antigens. Which of the following bacterial components is least likely to contain useful antigens?

- |             |              |
|-------------|--------------|
| a) Capsule  | b) Cell wall |
| c) Flagella | d) Ribosomes |

(ii)

Each of the following statements concerning the Gram stain is correct except:

- |  |   |
|--|---|
| a) Escherichia coli stains pink because it has a thin peptidoglycan layer                        | b) Streptococcus pyogens stains blue because it has a thick peptidoglycan layer   |
| c) Mycoplasma pneumoniae is not visible in the Gram's stain because it does not have a cell wall | d) Mycobacterium tuberculosis stains blue because it has a thick lipid rich layer |

(iii) An outbreak of sepsis caused by Staphylococcus aureus has occurred in the newborn nursery. You are called upon to investigate. According to your knowledge of the normal flora, what is the most likely source of the organism?

- |         |           |
|---------|-----------|
| a) Nose | b) Colon  |
| c) Hand | d) Throat |

(iv) Staphylococci are common resident flora of \_\_\_\_\_.

- a) intestine
- b) mouth
- c) skin
- d) stomach

(v) ?-hemolytic streptococci, are rarely seen on \_\_\_\_\_.

- a) stomach
- b) normal skin
- c) mouth
- d) intestine

(vi) Streptococci are common resident flora of \_\_\_\_\_.

- a) mouth
- b) colon
- c) duodenum
- d) stomach

(vii) Where does the *Streptococcus mutans* adhere to the body site?

- a) intestinal tract
- b) tongue
- c) teeth
- d) hairs

(viii) Which of the following disease is best diagnosed by serologic means?

- a) Pulmonary tuberculosis
- b) Gonorrhoea
- c) Actinomycosis
- d) Q Fever

(ix) Some bacteria and fungi need an iron receptors molecule for their growth, what is it called?

- a) Siderophores
- b) Ionophores
- c) Siderocytes
- d) None of these

(x) It is true regarding the normal microbial flora present on the skin and mucous membranes that:

- a) It cannot be eradicated by antimicrobial agents
- b) It is absent in the stomach due to the acidic pH
- c) It establishes in the body only after the neonatal period
- d) The flora in the small bronchi is similar to that of the Trachea

(xi) Lactobacillus is a human pathogen that is also part of normal flora and found in:

- a) colon
- b) mouth
- c) genital tract of female
- d) all of these

(xii) \_\_\_\_\_ meant the presence of bacteria in the blood with clinical signs and symptoms of infection.

- a) Septicaemia
- b) Bacteremia
- c) Septicaemia and bacteremia
- d) none of these

(xiii) Which cytokines play a central role in the development of systemic inflammation and pathology

- a) IL-2 and IL-15
- b) IL-10
- c) TNF and IL-1
- d) IL-12

(xiv) What time of day is best to collect a sputum specimen?

- a) morning
- b) evening
- c) any time of the day
- d) all of these

(xv) What is the ideal location for sputum collection?

- a) Inside the doctor's clinic
- b) Inside the laboratory
- c) Outdoors or in a well ventilated area
- d) The patient's bathroom with the door closed

(xvi) Which of the following tests requires a blood sample for the diagnosis of active pulmonary TB?

- a) Sputum smear microscopy
- b) Liquid culture
- c) Interferon-gamma release assay (IGRA)
- d) None of these

(xvii) Which of the following constitutes a good sample for sputum microscopy?

- a) 5 ml of muco-purulent sputum
- b) 5 ml of clear saliva

- c) 2 ml of sputum in a washed food container      d) all of these

(xviii) When should one suspect the possibility of drug-resistant TB?

- a) When the patient has been treated for TB in the past      b) When the patient is in close contact with a patient who has drug-resistant TB  
c) When the patient has defaulted from treatment before the present illness      d) all of these

(xix) \_\_\_\_\_ is used to obtain an urine sample from a patient who is bedridden, cannot urinate on their own, and cannot be catheterized.

- a) Clean-catch      b) Timed  
c) first-morning      d) Suprapubic aspiration collection

(xx) \_\_\_\_\_ urine samples collected at a particular time of day or over a specified period of time.

- a) Clean-catch      b) Timed  
c) first-morning urine      d) Suprapubic aspiration collection

(xxi) The \_\_\_\_\_ urine sample is the preferred specimen for chemical and microscopic urine testing

- a) Clean-catch      b) Timed  
c) first-morning      d) Suprapubic aspiration collection

(xxii) The \_\_\_\_\_ procedure often performed on patients who are bedridden, post-operation or who cannot urinate independently.

- a) Clean-catch      b) Timed  
c) Catheterized collection      d) Suprapubic aspiration collection

(xxiii) Commercially available blood culture systems:

- a) Biphasic septichecksystem      b) Opticult blood culture system  
c) Oxoid signal broth displacement system      d) all of these

(xxiv) BAC T /Alert system detects \_\_\_\_\_ produced by growing microorganisms.

- a) CO<sub>2</sub>
- b) O<sub>2</sub>
- c) H<sub>2</sub>
- d) All of these

(xxv) Red-top blood collection tubes contain

- a) sodium citrate and citric acid
- b) no additives
- c) sodium oxalate
- d) heparin

(xxvi) Blue-top blood collection tubes contain

- a) heparin
- b) sodium oxalate
- c) no additives
- d) sodium citrate and citric acid

(xxvii) Black-top blood collection tubes contain

- a) sodium oxalate
- b) no additives
- c) heparin
- d) sodium citrate and citric acid

(xxviii) Grey-top blood collection tubes contain

- a) sodium citrate and citric acid
- b) heparin
- c) glycolytic inhibitor
- d) sodium oxalate

(xxix) Yellow-top blood collection tubes contain

- a) acid-citrate-dextrose (ACD) solution
- b) sodium oxalate
- c) heparin
- d) sodium citrate and citric acid

(xxx) Presence of fungi or yeasts in the blood:

- a) fungemia
- b) bacteremia
- c) septicemia
- d) none of these

(xxxi) Septicaemia is

- a) Bacteria in blood
- b) Toxin in blood

c) Pus in blood

d) Multiplication of bacteria and toxins in blood

(xxxii) Salmonella typhi is causative organism of:

a) Undulant fever

b) Remittent fever

c) Dengue fever

d) Enteric fever

(xxxiii) Which of the following Salmonellaparatyphi is the commonest in India?

a) A

b) B

c) C

d) None of these

(xxxiv) The following infections caused by E. coli, except

a) Meningitis

b) Septic infections of wounds

c) Diarrhoea

d) Dysentery

(xxxv) Causative organism of diphtheria was first demonstrated by

a) Robert Koch

b) Lois Pasteur

c) Klebs and Loeffler

d) Volhard and Fahr

(xxxvi) The ideal clinical specimen for pulmonary TB diagnosis is:

a) Blood

b) Urine

c) Sputum

d) tissue

(xxxvii) Which one of the following is the confirmatory test for syphilis?

a) Enzyme immunoassay (EIA) test.

b) VDRL

c) RPR

d) All of these

(xxxviii) Which of the following diagnostics tests is intended for latent tuberculosis infection?

a) Sputum smear microscopy

b) Polymerase chain reaction (PCR)



c) Alpha-hemolytic Streptococci                      d) None of these

(xlv) The incubation period of diphtheriae is

- a) Upto 2 weeks    b) Upto 1 week
- c) 2–4 weeks    d) None of these

(xlvi) Diphtheria virulence test is

- a) Ascoli's thermoprecipitation test                      b) Elek's gel precipitation test
- c) C.R.P test    d) M.R.T. test

(xlvii) Diphtheria toxoid is prepared by using

- a) Aldehyde    b) Formalin
- c) Phenols     d) None of these

(xlviii) Diphtheria is an example of

- a) Bacteraemia    b) Pyaemia
- c) Septicemia    d) Toxaemia

(xlix) \_\_\_\_\_ is contaminated to some degree with secretion of the oropharyngeal cavity

- a) expectorated sputum    b) Early morning
- c) timed    d) none of these

(l) Ziehl-Neelsen staining is a bacteriological stain used to identify:

- a) Gram-positive bacteria    b) acid-fast organisms
- c) Gram-negative bacteria    d) none of these

(li) Of the following tests, which has the highest sensitivity for TB?

- a) Smear microscopy    b) Tuberculin skin test
- c) Liquid cultures    d) Interferon-gamma release assay (IGRA)



(lii) Main symptom of tuberculosis is

- a) Tubercle formation
- b) Liquid formation
- c) Tubercle formation and Liquid formation
- d) None of these

(liii) The greatest number of tubercle bacilli is present in:

- a) Large sized tuberculomas
- b) Miliary tuberculosis
- c) Tuberculous lymphadenitis
- d) Tuberculous cavity of the lung

(liv) Histoid Hansen is a variety of

- a) Tuberculoid Leprosy
- b) Borderline tuberculoid
- c) Borderline lepromatous
- d) Lepromatous leprosy

(lv) Streptococcus pyogenes produces all of the following lesions, except

- a) Impetigo contagiosa
- b) Erysipelas
- c) Boil
- d) Paronychia

(lvi) Rheumatic fever is most commonly caused by

- a) *S. viridans*
- b) *S. pyogenes*
- c) *S. aureus*
- d) None of these

(lvii) The causative agent of tetanus is

- a) *Clostridium botulinum*
- b) *Cl. tetani*
- c) *Cl. welchii*
- d) *Cl. perfringens*

(lviii) Tetanus is caused by spread of

- a) Exotoxin in sympathetic system
- b) Exotoxin in parasympathetic system
- c) Endotoxin in sympathetic system
- d) Endotoxin in parasympathetic system

(lix) Specific test for syphilis is

- a) VDRL test
- b) ELISA

c) FTA

d) None of these

(lx) Gonorrhoea is

a) Air borne disease

b) Water borne disease

c) Sexually transmitted venereal disease

d) Water borne disease and sexually  
transmitted venereal diseases