



**BRAINWARE UNIVERSITY**  
**Term End Examination 2020 - 21**  
**Programme – Bachelor of Pharmacy**  
**Course Name – Pharmaceutical Microbiology**  
**Course Code - BP303T**

**Semester / Year - Semester III**

Time allotted : 90 Minutes

Full Marks : 75

[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 75=75

1. (Answer any Seventy five )

(i) All of the followings are the examples of spherical shaped bacteria except

- |                          |                          |
|--------------------------|--------------------------|
| a) Diplococcus pneumonia | b) Streptococcus lactis  |
| c) Klebbisella pneumonia | d) Staphylococcus aureus |

(ii) Which type of culture media is required for the cultivation of fastidious micro-organisms?

- |                     |                    |
|---------------------|--------------------|
| a) Enrichment media | b) Selective media |
| c) Enriched media   | d) Indicator media |

(iii) The bacteria, which acquire energy from both light and reduced inorganic compound is called

- |                      |                     |
|----------------------|---------------------|
| a) Photolithotrophs  | b) Photochemotrophs |
| c) Photoorganotrophs | d) Phototrophs      |

(iv) Pseudomonas fluorescens is an example of

- |                          |                             |
|--------------------------|-----------------------------|
| a) Obligate psychrophile | b) Facultative psychrophile |
| c) Thermophile           | d) Mesophile                |

(v) RW co-efficient test is used to evaluate

- |                        |                                     |
|------------------------|-------------------------------------|
| a) Antibiotic activity | b) Sterility of packaging materials |
|------------------------|-------------------------------------|

c) Bactericidal activity

d) Nature of organism in bacterial infection

(vi) For thermophilic micro-organisms the minimum growth temperature required as

a) 20 ° C

b) 37 ° C

c) 45 ° C

d) 65° C

(vii) A virus can have

a) Double standard DNA

b) Single standard DNA

c) Both Double standard DNA and Single standard DNA

d) Either Double standard DNA and Single standard DNA

(viii) Which of the following bacteria is called as filamentous bacteria

a) Mycoplasmas

b) Spirochetes

c) Vibrios

d) Actinomycetes

(ix) Membranous in folding in bacteria that initiate DNA replication is

a) Mesosomes

b) Carboxysome

c) Magnetosome

d) Nucleosome

(x) Spinae is rigid tubular appendages in

a) Gram positive bacteria

b) Gram negative bacteria

c) Both Gram positive bacteria and Gram negative bacteria

d) Actinomycetes

(xi) Surface appendage of bacteria meant for cell-cell attachment during conjugation is

a) Pili

b) Flagella

c) Spinae

d) Cilia

(xii) Cork-screw shaped forms of bacteria are

- a) Bacilli
- b) Stalked bacteria
- c) Actinomycetes
- d) Spirochaetes

(xiii) 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

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

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

(xv) Each of the following agents is a recognized cause of diarrhea except

- a) *Clostridium perfringens*
- b) *Vibrio cholerae*
- c) *Enterococcus faecalis*
- d) *Escherichia coli*

(xvi) Roll tube method is suitable technique for isolating.....

- a) Stringent anaerobes
- b) Stringent aerobes
- c) Both Stringent anaerobes and Stringent aerobes
- d) Thermophiles

(xvii) Chocolate agar is required for the cultivation of...

- a) *Haemophilus*
- b) *Pseudomonas*
- c) *Streptococcus*
- d) *Staphylococcus*

(xviii) *Thiobacillus thiooxidans* can survive at the pH.....

- a) 1-6.5
- b) 14
- c) 7-9
- d) 10-12

(xix) Which one is not a spherical shaped bacterium?

- a) Diplococcus pneumonia
- c) Klebbisella pneumonia

- b) Streptococcus lactis
- d) Staphylococcus aureus

(xx) Corynebacterium diphtheria is an example of

- a) Obligate psychrophile
- c) Thermophile

- b) Facultative psychrophile
- d) Mesophile

(xxi) Thermus aquaticus is an example of

- a) Obligate psychrophile
- c) Steno Thermophile

- b) Facultative psychrophile
- d) Mesophile

(xxii) The optimum growth temperature of psychrophile is:

- a) 15° C
- c) 45 ° C

- b) 37 ° C
- d) 65 ° C

(xxiii) Each of the following organisms is an important cause of urinary tract infections except:

- a) Klebsiella pneumoniae
- c) Bacteriodes fragilis

- b) Escherichia coli
- d) Proteus mirabilis

(xxiv) The bacterial cells are at their metabolic peak during

- a) Lag phase
- c) Stationary

- b) Log
- d) Decline

(xxv) The medium used in membrane filter technique was

- a) EMB agar
- c) Lactose broth

- b) EMR-Vp medium
- d) Endo agar

(xxvi) The size of the virus can be determined by

- a) Micrography
- c) Ultra-filtration

- b) Ultra-centrifugation at high speed
- d) All of these

(xxvii) pH required for the growth of bacteria is

- a) 6.8 – 7.2
- b) 5.6 – 8.2
- c) 3.0 – 6.0
- d) 8.0 – 14.0

(xxviii) Which of the following organisms requires tryptophan for growth?

- a) H.influenza
- b) Vibrio
- c) Gonococci
- d) S.typhi

(xxix) How much time bacteria take for the complete duplication?

- a) 30 min
- b) 10 min.
- c) 20 min
- d) 25 min.

(xxx) Drug resistance in bacteria is mainly determined by factor:

- a) F
- b) R
- c) Col
- d) Lysogenic factor

(xxxi) A common laboratory method of cultivating anaerobic micro-organisms is

- a) Gas pack system
- b) Brewer jar system
- c) Pyrogallic acid over the cotton
- d) None of these

(xxxii) Phenol co-efficient indicates

- a) Efficiency of a disinfectant
- b) Dilution of a disinfectant
- c) Purity of a disinfectant
- d) Quantity of a disinfectant

(xxxiii) Chemically mycolic acid is...

- a) molecular weight ?- High branched ? hydroxy fatty acid
- b) High molecular weight ?-branched ? carboxy fatty acid
- c) High molecular weight ? -branched ? hydroxy fatty acid
- d) High molecular weight ?-branched ? methoxy fatty acid

(xxxiv) Identify the anionic dye used in the staining process.

- a) Nigrosin
- b) Crystal violet
- c) Methylene blue
- d) both Crystal violet and Methylene blue

(xxxv) Which of the following is used as a counter stain in Auramine method of staining?

- a) Auramine phenol
- b) Auramine formaldehyde
- c) Potassium permanganate
- d) Auramine acetone

(xxxvi) Ziehl-Neelson staining is used for the identification of...

- a) Acid fast bacteria
- b) Gram positive bacteria
- c) Thermophiles
- d) Gram negative bacteria

(xxxvii) Identify the application of endospore staining.

- a) Demonstration of spore structure in bacteria as well as free spore
- b) Identification of capsule surrounding the cell
- c) Identification of intracellular deposition of starch, glycogen
- d) Differentiate between acid-fast and non acid-fast bacteria

(xxxviii) Saturated steam at 121°C in an autoclave will exert a pressure of....

- a) 69kPa
- b) 103.5kPa
- c) 138kPa
- d) 207kPa

(xxxix) Cold sterilization is done....

- a) At osmotic pressure
- b) By ionizing radiation
- c) By desiccation
- d) At freezer

(xl) Disaggregating of cells can be achieved by

- a) physical disruption
- b) enzymatic digestion
- c) treating with chelating agents
- d) All of these

(xli) The Bacteria move in response to magnetic field is

- a) Spirochetes
- b) Treponema
- c) Aquaspirillum Magnetotacticum
- d) None of these

(xlii) Pore size of 'nitrocellulose' is

- a) 0.23  $\mu\text{m}$
- b) 0.22  $\mu\text{m}$
- c) 0.21  $\mu\text{m}$
- d) 0.26  $\mu\text{m}$

(xliii) The characteristic feature of retrovirus is the presence of...

- a) DNA polymerase
- b) RNA polymerase
- c) Reverse transcriptase
- d) Restriction endonuclease

(xliv) Causative organism of plague is...

- a) B atrophaeus
- b) Staphylococcus aureus
- c) Streptococcus pyogens
- d) Streptococcus pyogens

(xlv) Fungi differ from bacteria in that the former are...

- a) Thermophiles
- b) Prokaryotic
- c) Eukaryotic
- d) Acidophiles

(xlvi) Mycology is the study of fungi such as study of...

- a) Yeasts
- b) Molds
- c) Algea
- d) Both Yeasts and Molds

(xlvii) The presence of only one living microorganism means an object is:

- a) Aseptic
- b) Disinfected
- c) Sanitized
- d) Contaminated

(xlviii) Two types of fermentations are carried out for the production of

- a) Pickle
- b) Yoghurt

c) Vinegar

d) Sausages

(xlix) In bread manufacturing, alcoholic fermentation is carried out by

a) *Streptococcus thermophilus*

b) *S. carlsbergensis*

c) *Saccharomyces cerevisiae*

d) *Lactobacillus bulgaricus*

(l) Which of the following is ionizing radiation

a) Uv rays

b) IR

c) Gamma rays

d) None of these

(li) The vitamin required for *Lactobacillus* species

a) Riboflavin

b) Niacin

c) Pyridoxine

d) Folic acid

(lii) Enzyme responsible for alcoholic fermentation

a) Ketolase

b) Zymase

c) Peroxidase

d) Oxidase

(liii) Amphotericin B is assayed by...

a) Cylinder plate method

b) Turbidimetric assay method

c) Both Cylinder plate method and  
Turbidimetric assay method

d) None of these

(liv) *Micrococcus luteus* is used for the assay of...

a) Carbenicillin

b) Erythromycin

c) Bleomycin

d) Azithromycin

(lv) *Klebsiella pneumoniae* is used for the assay of...

a) Carbenicillin

b) Erythromycin

c) Streptomycin

d) Azithromycin



(lvi) Widal test is used to detect.....

- a) Typhoid
- b) Leprosy
- c) Tuberculosis
- d) AIDS

(lvii) Mycobacteria are stained with

- a) Gram staining
- b) Simple staining
- c) Both Gram staining and Simple staining
- d) Ziehl Neelsen's staining

(lviii) Father of microbiology

- a) Louis Pasteur
- b) Lister
- c) V.Leeuwenhock
- d) Robert Koch

(lix) The largest virus is

- a) Parvo virus
- b) Parvo virus
- c) Pox virus
- d) None of these

(lx) AIDS virus is -----virus

- a) RNA
- b) DNA
- c) Retro
- d) Entero

(lxi) Tuberculosis is a

- a) water borne disease
- b) air borne disease
- c) food borne disease
- d) atthropod borne disease

(lxii) Which of the following is most resistant to antiseptics/sterilization:

- a) Fungus
- b) Prion
- c) Cyst
- d) Bacterial Spore

(lxiii) Sharp instruments should not be sterilized by:

- a) Chemical disinfectants
- b) Autoclaving

c) Boiling

d) Hot air ovens

(lxiv) The time in minutes at a specific temperature needed to kill a population of cells is the

a) D value

b) F value

c) thermal death temperature

d) decimal reduction time

(lxv) Browne's tube is used as indicator for efficacy of:

a) Filtration

b) Heat sterilization

c) Ultraviolet rays

d) Chemical sterilization

(lxvi) Which of the following can be disinfected and reused without sterilization?

a) glassware and enamelware

b) currettes

c) needles and syringes

d) vaginal specula

(lxvii) Identify the term that can describe a disinfectant that can inhibit the growth of fungi:

a) microbicidal

b) fungicidal

c) micro biostatic

d) fungi static

(lxviii) All of the following are sporicidal except

a) glutaraldehyde

b) formaldehyde

c) ethylene oxide

d) alcohol

(lxix) Which of the following is not the general step of animal cell culture?

a) Harvest cells

b) Isolate cells with the use of appropriate enzymes

c) Apply the isolated cell on to an appropriate growth media in a culture dish

d) Thermal screening

(lxx) Which one of the following food poisoning bacteria is transferred to food by coughing and sneezing?

- a) Bacillus cereus
- b) Salmonella typhi
- c) Staphylococcus aureus
- d) Clostridium perfringens

(lxxi) Higher dissolved oxygen concentration in the culture media is toxic and leads to.....

- a) DNA degradation
- b) Lipid peroxidation
- c) Metabolism of nutrients in culture media at a rate greater than that required for consumption
- d) All of these

(lxxii) The major problem associated with the isolation of free cells and cell aggregates from organs is that of.....

- a) Releasing the cells from their supporting matrix
- b) Inhibiting the cells from their supporting matrix
- c) Disintegrating the cells from their supporting matrix
- d) None of these

(lxxiii) Which of the following is not the explantation technique?

- a) Slide culture
- b) Carrel flask culture
- c) Roller test tube culture
- d) Adherent primary culture

(lxxiv) Cells which have undergone transformation frequently become.....

- a) Anchorage independent
- b) Anchorage dependent
- c) Stable
- d) Unstable

(lxxv) What is the concentration of CO<sub>2</sub> required for culturing animal cells?

- a) 2-5%
- b) 1-10%
- c) 10-15%
- d) 15-20%