



## BRAINWARE UNIVERSITY

### Term End Examination 2019 – 20

Programme – Bachelor of Pharmacy

Course Name – Pharmaceutical Microbiology

Course Code – BP303T

(Semester – 3)

Time allotted: 3 Hours

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)

20 x 1 = 20

1. Answer all the questions
  - (i) All of the followings are the examples of spherical shaped bacteria except
 

a. <i>Diplococcus pneumonia</i>	b. <i>Streptococcus lactis</i>
c. <i>Klebbisella pneumonia</i>	d. <i>Staphylococcus aureus</i>
  - (ii) 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
  - (iii) A virus can have
 

a. Double standard DNA	b. Single standard DNA
c. Both a & b	d. Either a or b
  - (iv) Surface appendage of bacteria meant for cell-cell attachment during conjugation is
 

a. Pili	b. Flagella
c. Spinae	d. Cilia
  - (v) Each of the following organisms is an important cause of urinary tract infections except:
 

a. <i>Klebsiella pneumoniae</i>	b. <i>Escherichia coli</i>
c. <i>Bacteriodes fragilis</i>	d. <i>Proteus mirabilis</i>

- (vi) The bacterial cells are at their metabolic peak during
- Lag phase
  - Log
  - Stationary
  - Decline
- (vii) Virulent factor in pneumococcus is
- Cell wall
  - Capsule
  - Mesosomes
  - Endotoxins
- (viii) pH required for the growth of bacteria is
- 6.8 – 7.2
  - 5.6 – 8.2
  - 3.0 – 6.0
  - 8.0 – 14.0
- (ix) Drug resistance in bacteria is mainly determined by factor:
- F
  - R
  - Col
  - Lysogenic factor
- (x) Identify the obligate anaerobes
- Salmonella*
  - Vibrio cholera*
  - Cl. tetani*
  - Sarcinae*
- (xi) The bacterial culture prepared by pure culture is
- Inoculum
  - Suspension
  - Dilution
  - None of these
- (xii) Pore size of 'nitrocellulose' is
- 0.23  $\mu\text{m}$
  - 0.22  $\mu\text{m}$
  - 0.21  $\mu\text{m}$
  - 0.26  $\mu\text{m}$
- (xiii) Which of the following method is best to sterilize heat labile solutions?
- Membrane filtration
  - Hot Air Oven
  - Pasteurization
  - Autoclave
- (xiv) Gram-positive bacteria are usually more susceptible to?
- streptomycin
  - penicillin
  - tetracycline
  - ampicillin
- (xv) The purpose of the hand scrub by the surgical team is to render their skin:
- sterile
  - Disinfected
  - Sanitized
  - Surgically Clean

- (xvi) *Acetobacter aceti* converts -----into acetic acids
- Ethyl alcohol
  - Glucose
  - Methyl alcohol
  - Starch
- (xvii) The smallest virus is
- Parvo virus
  - Rhabo virus
  - Pox virus
  - Adeno virus
- (xviii) The three parameters of steam sterilization are
- Steam under pressure, time, and temperature
  - Time, temperature, and concentration
  - Temperature, time, and humidity
  - All
- (xix) Which of the following is bactericidal?
- Ionizing radiation
  - Freeze-drying
  - Deep freezing
  - Membrane filtration
- (xx) Who is credited with developing a procedure to heat wine at temperatures well below boiling to prevent spoilage of the wine?
- Koch
  - Gram
  - Lister
  - Pasteur

### Group – B

(Short Answer Type Questions)

7 x 5 = 35

Answer any seven from the following

- Differentiate between gram positive and gram negative bacteria on the basis of their cell wall composition. Describe any two methods of isolation techniques of pure culture. 2+3
- Define culture media. Classify culture media on the basis of physical state or consistency with suitable example. Give examples of anaerobic, aerobic and indicator culture media. 1+2+2
- What is disinfectant? What is the difference between antiseptic and disinfectant? Mention the properties of ideal disinfectant. 1+1+3
- What are the importance of animal cell culture in gene therapy and drug screening and development? 5
- What is staining? Describe Acid Fast staining with proper flow diagram. 1+4
- Explain dry heat sterilization with proper examples. 5
- Define microbial assay. Explain microbial assay of amino acid with proper flow chart. 1+4

- |     |   |     |
|-----|---|-----|
| 9.  | Classify different types of preservatives depending on their mechanism of action with examples. Classify different types preservatives used in preservation of pharmaceutical products with examples. | 3+2 |
| 10. | Write a short note on different types of microbial contamination..  | 5   |

**Group – C**

(Long Answer Type Questions)

2 x 10 = 20

Answer any *two* from the following

- |         |   |     |
|---------|---|-----|
| 11..    | Describe the typical bacterial growth curve with suitable graphical representation.                       | 6+4 |
| 12. (a) | Mention any three methods of preparing a suitable environment for the cultivation of stringent anaerobes. | 6   |
| (b)     | Differentiate between selective media and enrichment media with suitable example.                         | 3   |
| (c)     | What is the function of agar as a raw material for the preparation of culture media?                      | 1   |
| 13. (a) | Define biological indicator with proper examples.   | 2+3 |
| (b)     | Explain assessment of new antibiotic.   | 5   |

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