

Printing Pages :2

Paper Code: BP-302T

A (SVSU:2023-24/R)

Enrollment No.

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B.Pharm

II YEAR, III SEMESTER EXAMINATION

Subject Name- Physical Pharmaceutics-I, BP-302T

[Time: 3:00 Hours]

[Max. Marks: 75]

I. Multiple Choice Questions (MCQ)

[20×1=20]

1. Buffer index is also known as

- a. Buffer efficiency b. Buffer value c. Both d. None

2. In biological buffer system plasma is buffer

- a. secondary b. Primary c. tertiary d. None

3. Which one of the following is an isotonic solution

- a. 0.9N NaCl b. 0.09N NaCl c. 0.1N NaCl d. 0.01N NaCl

4. A phase exists between liquid and crystalline state is known as

- a. Metaphase b. polymorph c. mesophase d. solid crystals

5. Above which temperature, no liquefaction of gas possible

- a. Absolute b. Critical c. Boiling point d. None

6. Polymorphs are differing in

- a. Molecular weight b. Molecular number c. Shape d. crystalline structure

7. EDTA is an example of ligand type

- a. Bidentate b. Hexadentate c. Tetradentate d. Unidentate

8. Glycine forms complex with cupric ions only at the pH range

- a. Neutral b. Acidic c. alkaline d. Both acidic and alkaline

9. Which complex is used as an electrode in pH determination?

- a. Layer types b. Clathrates c. Chelates d. Quinhydrone

10. Carbon dioxide circulates in the living body by means of

- a. Agglomeration b Aggregation c. Diffusion d. Flocculation

11. What is the effect of chemical reactions on solubility of liquid-gas solution?

- a. Increases b. Decreases c. No effect d. Both A and B

12. Inclusion complexes are also known as

- a. Acclusion b. Exclusion c. Reclusion d. Occlusion

13. The HLB range for lipophilic surfactants is

- a. 2 to 9 b. 9-16 c. 16-20 d. above 20

14. Which substance decreases the surface tension of water?
a. Span b. methanol c. sodium chloride d. sucrose
15. For wetting the contact angle (in degree) should have a value nearly
a. 0 b. 90 c. 180 d. 270
16. Surface tension is the change in the surface free energy per unit change in
a. Area b. Density c. Length d. Volume
17. At critical temperature, surface tension of the liquid becomes
a. higher b. lower c. Zero d. No effect
18. Unit of surface tension is
a. Newton/meter b. Dynes c. Poise d. None
19. Physical stability of Vitamin A and D can be enhanced by complexation with
a. EDTA b. Caffeine c. β cyclodextrin d. BAL
20. Which property is similar in case of eutectic mixtures?
a. Boiling point b. Melting point c. Surface tension d. Lattice arrangement

II. Long Answers (Answer 2 out of 3)

[2×10=20]

1. Write in detail about surface active agents.
2. Give classification of complexes with suitable examples.
3. Write a note on –
Latent heat, Eutectic mixture, Liquid crystals, Glassy state, Polymorphism

III. Short Answers (Answer 7 out of 9)

[7×5=35]

1. Discuss about distribution law, its limitations and applications.
2. What you know about HLB scale? Write its estimation methods.
3. Write a note on surface free energy and spreading coefficient.
4. What are ideal and real solutions?
5. Write about various diffusion systems in biological systems.
6. What is the application of buffer in pharmacy?
7. What are buffered isotonic solutions?
8. Write a note on partially miscible liquids and critical solution temperature.
9. What are different solubility expressions?

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Paper Code :BP-303T

C (SVSU:2022-23/R)

Enrollment No.

B.Pharm

2nd year 3rd SEM. Examination

Pharmaceutical Microbiology (BP 303T)

Time: 3 Hrs

Max Marks: 75

SECTION A: Attempt ALL question

(20X1= 20marks)

1. The most spoilage bacteria grows at
(a) Acidic pH (b) Neutral pH (c) Alkaline pH (d) All of the above
2. Which of the following method can be used to determine the number of bacteria quantitatively?
a) Spread-plate b) Streak-plate c) Pour-plate and spread plate d) All
3. Which microorganism(s) among the following perform photosynthesis by utilizing light
a) Cyanobacteria, Fungi and Viruses b) Viruses c) Cyanobacteria d) Fungi
4. Glassware are sterilized by
a. autoclave b. laminar air flow c. both a and b d. hot air oven
5. Which of the following acids will have a higher bacteriostatic effect at a given pH?
(a) Maleic acid (b) Citric acid (c) Acetic acid (d) Tartaric acid
6. What are the intrinsic factors for microbial growth?
(a) pH (b) Moisture (c) Oxidation-Reduction Potential (d) All of the above
7. Term vaccine was coined by
a. Robert Koch b. Pasteur c. Needham d. None of these
8. Give the example of multicellular organism
a. Virus b. Coccus c. Fungi d. None of these
9. The prokaryotic cell membrane
a. Contains metabolic enzymes b. Is selectively permeable
c. Regulates the entry and exit of materials d. Contains proteins and phospholipids
10. Which part of the compound microscope helps in gathering and focusing light rays on the specimen to be viewed?
a) Condenser lens b) Magnifying lens c) Objective lens d) Eyepiece lens
11. Growth of bacteria or microorganisms refer to
a) changes in the total population b) an increase in number of cells
c) an increase in the size of an individual organism d) an increase in the mass of an individual organism

12. Salt and sugar preserve foods because they
 a. Make them acid b. Produce a hypotonic environment
 c. Deplete nutrients d. Produce a hypertonic environment
13. Gram -ve bacteria appear as
 a. Violet b. Red c. both d. None of these
14. Which of the following are produced by microorganisms?
 a) Alcoholic beverages b) Fermented dairy products c) Breads d) All of the mentioned
15. Aseptic transfer is done at
 (a) Clean room 100 (b) Clean room 1000 (c) Clean room 10000 (d) None
16. Which of the following preservative is used in tablet
 a. methyl paraben b. bromophenol c. chlorocresol d. all of the above
17. The image obtained in a compound microscope is
 a. Real b. Virtual c. Real inverted d. Virtual inverted
18. Who is known as the father of Microbiology?
 a) Edwin John Butler b) Ferdinand Cohn
 c) Robert Koch d) Antoni van Leeuwenhoek
19. Bacillus is an example of
 a. gram +ve b. gram -ve c. both d. none of the above
20. Tuberculosis is a
 a. Water borne disease b. Air borne disease c. Food borne disease d. Atthropod borne disease

SECTION B: Attempt any seven of the following

(7X5= 35marks)

- Question 1: Define microbiology. Explain scope of microbiology.
 Question 2: Explain different method of sterilization.
 Question 3: Draw and explain laminar air flow equipment.
 Question 4: Explain procedure of simple staining.
 Question 5: Explain bacterial growth curve.
 Question 6: Explain morphology of virus.
 Question 7: Explain sterility indicators.
 Question 8: Explain procedure of gram staining.
 Question 9: Write factor influencing action of disinfectant.

SECTION C: Attempt any Two of the following

(2X10= 20marks)

- Question 1: Explain primary, established and transformed cell culture.
 Question 2: Draw a well labeled diagram of bacteria and explain its various structural function.
 Question 3: Explain different method of sterilization.

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Paper Code: BP-304 T

A (SVSU:2023-24/R)

Enrollment No.

COURSE NAME- B.PHARM

SECOND YEAR THIRD SEMESTER EXAMINATION

Subject Name: Pharmaceutical Engineering

Subject Code: BP 304T

[Time: 3:00 Hours]

[Max. Marks: 75]

Section-A

Q1. Attempt ALL questions.

(20X1=20)

- i. Factors affecting mixing are
 - (a) Particle size
 - (b) Particle shape
 - (c) Both (i) & (ii)
 - (d) None of these
- ii. Raoult's law is applicable is one of the following distillation process
 - (a) Molecular
 - (b) Simple
 - (c) Fractional
 - (d) Flash
- iii. The product becomes porous, when the following equipment for drying is used
 - (a) Drum dryer
 - (b) Spray dryer
 - (c) Fluidized bed dryer
 - (d) Tray dryer
- iv. Type II Florentine receivers is used for
 - (a) Oil heavier than water
 - (b) Oil lighter than water
 - (c) Both (i) & (ii)
 - (d) None of these
- v. Which one of the example of unit operation?
 - (a) Production of tablets
 - (b) Determination of viscosity
 - (c) Synthesis of penicillin
 - (d) Drying
- vi. Which type of liquid evaporates first in the distillation?
 - (a) Less volatile
 - (b) Non-volatile
 - (c) More volatile
 - (d) None of these
- vii. Which evaporators are used to concentrate insulin, liver extract and vitamins?
 - (a) Climbing film
 - (b) Falling film
 - (c) Horizontal tube
 - (d) Falling tube
- viii. Which of the equipment uses Heat transfer by radiation?
 - (a) Hot air oven
 - (b) Incubator
 - (c) Microwave oven
 - (d) Refrigerator
- ix. As the drying rate increases, the moisture content in the substance:
 - (a) Decreases
 - (b) Increases
 - (c) Remain Constant
 - (d) None of these
- x. Double neck distillation flask known as
 - (a) Claisen flask
 - (b) Round bottom flask
 - (c) Both (i) & (ii)
 - (d) None of these
- xi. What is the principle of centrifugation?
 - (a) Size reduction
 - (b) Sedimentation
 - (c) Evaporation
 - (d) Filtration
- xii. Rate of filtration is propositional to the viscosity of the fluid.
 - (a) Directly
 - (b) Inversely
 - (c) Both (i) & (ii)
 - (d) None of these
- xiii. What type of filter does not come under the membrane filter?
 - (a) Precoat filtration
 - (b) Microfiltration
 - (c) Nanofiltration
 - (d) Ultrafiltration
- xiv. According to IP 1996, Pharmaceutical powders are classified into how many types?
 - (a) Three
 - (b) Four
 - (c) Five
 - (d) Six
- xv. Corrosion of metal involves.
 - (a) Physical reaction
 - (b) Chemical reaction
 - (c) Both (i) & (ii)
 - (d) None these
- xvi. Which of the following is use of Centrifugal separation?
 - (a) Clarification
 - (b) Skimming
 - (c) Bactofuge treatment
 - (d) All of these
- xvii. For which phase filter aid is used to filter.
 - (a) Gas & liquid
 - (b) Solid & liquid
 - (c) Gas
 - (d) Gel
- xviii. Basket centrifuge equipment is used for
 - (a) Filtration
 - (b) Mixing
 - (c) Size reduction
 - (d) All of these
- xix. Hydrocyanic acid is not shipped in
 - (a) Cast iron vessels
 - (b) Steel cylinder
 - (c) Aluminium container
 - (d) Monel drums
- xx. filter is used for continous operation and is utilized to filter slurries containing high proportion of solids.
 - (a) Drum filter
 - (b) Filter leaf
 - (c) Filter press
 - (d) None of these

[P.T.O.]

Section-B

Q2. Answer any TWO questions.

(2X10=20)

- i. Define distillation, write application of distillation and explain construction, working of laboratory scale Simple Distillation unit.

OR

Write the principle, construction and working of Double Cone Blender OR Ribbon Mixture.

- ii. What are the properties of glass? What are its applications as material of construction?
iii. With neat labeled diagram explain principle, construction, working, application, merits and demerits of plate and frame filter OR super centrifuge.

Section-C

Q3. Answer any SEVEN questions.

(7X5=35)

- i. Give the construction and working of climbing film evaporators OR Multiple tube evaporator.
ii. What is drying? Explain the rate of drying curve with diagram.
iii. Differentiate between evaporation and distillation. Describe principle, construction and working of Distillation under Reduced Pressure with neat labeled diagram.
iv. Define filtration. Give the principle, construction, working, application, merits and demerits of filter leaf OR Meta filter.
v. Discuss factors affecting size reduction.
vi. Write in brief about all the Heat Transfer mechanisms.
vii. What are the official standards of Powders?
viii. Give the construction and working of Orifice meter.