

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY

LONERE – RAIGAD – 402 103

Winter Semester Examination – Dec – 2019

Branch: B. Pharm

Semester:III

Subject: Physical Pharmaceutics-I_Theory (BP302T)

Date: 19/12/2019

Marks: 75

Time: 3hrs

- Instructions:** i) All questions are compulsory
ii) Figures to the right indicate full marks
iii) Draw the diagrams or flow charts wherever necessary.

Q. No.1 Multiple Choice Questions

(MCQs) = 20 x 1 = 20

(Answer all the questions)

1. Raoult's law is obeyed by.....

- A. Real solution B. Ideal solution C. Both A and B D. All of these

2. Liquid crystals resulting from the action of certain solvents on solids are known as.....

- A. Thermotropic B. Lyotropic C. Nematic D. Smectic

3. The system characterized by both upper and lower critical solution temperature is....

- A. Phenol-water B. Triethylamine-water C. Nicotine-water D. All of these

4. The refractive index of substanceswith rise in temperature

- A. Increases B. Decreases C. Remains unchanged D. None of these

5. The HLB value of the wetting agent is between.....

- A. 3-6 B. 9-12 C. 6-9 D. 0-3

6. is the difference in potential between the surface of the shear plane and the electroneutral region of the solution in dispersion

- A. Nernst potential B. Zeta potential C. Sedimentation potential D. Streaming potential

7. is the number of gram equivalents of the solute present in one liter of the solution

- A. Molality B. Molarity C. Normality D. Mole fraction

8. The solubility of poorly water soluble drug.....in the presence of cosolvent

- A. Decreases B. Increases C. No change D. None of these

9. The following equipment is used to determine the optical rotation of the compounds

A. Refractometer B. Polarimeter C. Spectrophotometer D. Colorimeter

10. The formation of complex between glycine and cupric ion should result in

A. Increase in pH B. Decrease in pH C. No change in pH D. Both A and B

11. The ability of an element to exist in more than one form is known as

A. Polymorphism B. Allotropy C. Pseudopolymorphism D. None of these

12. The method used for the measurement of interfacial tension is ...

A. Capillary rise method B. Drop count method C. Tensiometer
D. All of these

13.is the ratio of increment of strong acid or base to the corresponding change in pH

A. Buffer index B. Buffer action C. Buffers D. Buffer number

14. The unit of interfacial tension in MKS and CGS system respectively is

A. N/M, Dynes/cm B. Dynes/cm, N/M C. N/M² D. Dynes/cm²

15. The protein present in high concentration and plays crucial role in the drug protein binding is

A. Globulin B. Albumin C. Alpha acid glycoprotein D. All of these

16. The solution containing solute in lower concentration than required for isotonic is...

A. Hypertonic D. Hypotonic C. Isotonic D. All of these

17. Ethylenediaminetetraacetic acid (EDTA) is an example of ligand type

A. Unidentate B. Bidentate C. Hexadentate D. Tridentate

18. The biological buffers present in the body are

A. Urine B. Blood C. Tears D. All of these

19. In.....type of complex ligand provides two or more donor groups to combine with metal ion

A. Clathrate B. layer type C. Chelate type D. Olefin type

20. One unit pH change means.....change in H⁺ ion concentration

A. 100 folds B. 10 folds C. 2 folds D. 20 folds

Q. No.2 Long Answers (Answer 2 out of 3) = 2 x 10 = 20

A] Define upper and lower CST with example. Describe in detail phenol-water system and give applications of CST.

B] Explain the concept of surface and interfacial tension. Describe the capillary rise method for the determination of surface tension.

C] Define and classify complexes. Enlist various methods for analysis of complexes and explain solubility method in detail.

Q. No.3 Short Answers (Answer 7 out of 9) = 7 x 5 = 35

A] Describe polymorphism along with applications.

B] Define refractive index. How will you determine it.

C] Which are the various methods for the adjustment of tonicity. Explain sodium chloride equivalent method.

D] Explain spreading coefficient along with applications.

E] Write a note on protein binding.

F] State and explain distribution law. Give its limitations and applications.

G] Give in detail about dielectric constant and its application.

H] Write a note on pharmaceutical aerosols.

I] Derive buffer equation and give its applications.

----- END OF PAPER -----