

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY
2nd Semester of B. Pharm. Examination
University Theory Examination October 2015
PH120 PHARMACEUTICAL ENGINEERING-II

Date: 15-10-2015, Thursday Time: 10:00a.m. to 1:00 p.m. Maximum Marks: 80

Instructions:

1. There are three sections in this question paper.
 2. SECTION – I comprises of Question 1. Total marks for Section 1 are 20. There are 20 sub-questions (MCQ type). Answers to SECTION – I are to be given in Answer Sheet for MCQ type questions provided to you. Maximum time allotted for SECTION – I is 30 minutes. Answers to SECTION – I must be written during the first 30 minutes of the examination.
 3. Answers to SECTION – II and SECTION – III are to be provided in separate Main Answer Books provided to you.
 4. Figures to right indicate marks.
 5. Draw neat sketches wherever necessary.
-

SECTION - I

- | | | |
|------------|--|-----------|
| Q 1 | Attempt all questions. Each question is of one mark. | 20 |
| 1. | Which one is use as filter aid?
[A] Talc
[B] Charcoal
[C] Kaoline
[D] All | 01 |
| 2. | Filtration is the process of removing solid form _____ by porous medium.
[A] Solid
[B] Liquid
[C] Gas
[D] All | 01 |
| 3. | The filtration process is faster if the temperature is _____.
[A] Small
[B] Less Pressure
[C] Equal
[D] larger | 01 |
| 4. | An example of unlimited area of filtration is
[A] Filter press
[B] Rotary drum filter
[C] Both
[D] None of these | 01 |

5. Rate of filtration of glycerine is increase by decreasing _____. 01
[A] Temperature
[B] Viscosity
[C] Pressure
[D] Surface area
6. Pore size of filter medium should be _____ then the solid present in liquid. 01
[A] Equal
[B] Bigger
[C] Smaller
[D] None
7. What are the properties of filter aid? 01
[A] Non toxic
[B] Chemically inert
[C] Low cost
[D] All
8. For what centrifuges cannot be used? 01
[A] The separation of well-settling solid particles
[B] The separation of non-miscible fluids
[C] The wetting of solid systems
[D] The separation of solids which settle down with difficulty
9. Thermosensitive material is 01
[A] Stable at higher Temperature
[B] Unstable at Temperature
[C] Melt at higher temperature
[D] None of the above
10. HVAC system has to keep positive pressure in 01
[A] Commercial kitchens
[B] Tablet manufacturing area
[C] Fume hood laboratories
[D] Parenteral department
11. Which instrument is used to measure humidity? 01
[A] Thermometer
[B] Hygrometer
[C] Rotameter
[D] Orifice meter
12. Perforated basket centrifuge is _____ process 01
instruments.
[A] Continues
[B] Batch
[C] A & B
[D] None
13. Petroleum products are refined by _____ distillation. 01
[A] Flash distillation
[B] Fractional distillation

- [C] Azeotropic distillation
[D] None of above
14. The moisture present as the no. of pounds of water per pound of dry solid when the drying limit has been attained by use of air at any given temperature and humidity is called as
[A] CMC 01
[B] EMC
[C] Total moisture
[D] Unbound moisture
15. In the following dryer, Droplets of liquid is sprayed into stream of hot air to obtained solid particles 01
[A] Tunnel dryer
[B] Spray Dryer
[C] A&B
[D] None of the above
16. One of the following is not the part of distillation assembly 01
[A] Condensor
[B] Receiver
[C] Water jacket
[D] Buckner funnel
17. One of the following is considered as types of evaporator 01
[A] Natural Circulation
[B] Film evaporator
[C] Forced circulation
[D] All of Above
18. Distillate is a liquid that 01
[A] mixes together
[B] condenses after distillation
[C] does not sink due to very fine particles
[D] a substance that will not dissolve
19. After completion of evaporation, _____ is remained as final product 01
[A] Dilute liquid
[B] Concentrated Liquid
[C] Distilled water
[D] Solid cake material
20. The rate of evaporation is 01
[A] directly proportional to the temperature of the liquid
[B] inversely proportional to the temperature of the liquid
[C] independent of the temperature of the liquid
[D] directly proportional to the humidity of the surrounding air

SECTION – II

- Q 2 Attempt any FOUR of the following**
- | | | |
|---|--|----|
| A | Define centrifugation. Discuss various factors affecting on centrifugation | 05 |
| B | Draw labeled diagram of an continuous centrifuge | 05 |
| C | Describe various components of HVAC system | 05 |
| D | Discuss working & mechanism of Plate and Frame filter press with diagram | 05 |
| E | Differentiate filtration and centrifugation | 05 |
| F | Write a short note on refrigeration cycle. | 05 |

SECTION – III

- Q 3 Attempt any FOUR of the following**
- | | | |
|---|---|----|
| A | Define Evaporation and discuss any three factors affecting evaporation. | 05 |
| B | Give the difference between evaporation and drying. | 05 |
| C | Write a short note on theory of drying. | 05 |
| D | Define distillation and give its types with applications in brief. | 05 |
| E | Write short note on Tray Dryer. | 05 |
| F | Write a note on Duhring's Rule and Raoult's law | 05 |
- Q 4 Attempt any FOUR of the following**
- | | | |
|---|--|----|
| A | Write a short note on steam distillation | 05 |
| B | Write a short note on Fluidized bed dryer. | 05 |
| C | Give principle, construction, working and applications of spray dryer. | 05 |
| D | Give the pharmaceutical applications of drying. | 05 |
| E | Classify Evaporators. Write a note on Evaporating pan. | 05 |
| F | Explain in detail mechanism of drying | 05 |
-