

Seat No.:-----

Enrolment No.:-----

UKA TARSADIA UNIVERSITY

Maliba Pharmacy College

B. Pharm 1st Semester Mid-Semester Examination Nov 2012

030020101- Pharmaceutical Engineering

Time: 01:30 p.m. To 4:30 p.m.

103

Date: 26/11/2012

Max. Marks: 70

Instructions:

- Question no. 1 is compulsory.
- From Q.2 to Q.7 attempt any **four** questions.
- Make suitable assumption whenever necessary.
- Figures to the right indicate full marks.

- Q.1** (a) Answer the following: (any six) 06
- 1 Define material balance.
 - 2 Define key substance.
 - 3 Define filter medium.
 - 4 Explain the term of magnetron.
 - 5 Explain the term of sublimation.
 - 6 Define: Coefficient of thermal conductivity
 - 7 Enlist three types of heat possessed by steam.
 - 8 Enlist different units of heat.
- (b) Describe in brief: (any four) 08
- 1 Define filter aid and write the ideal properties of filter aid
 - 2 Convert the unit 140 gm/cm^3 to lb/ft^3
 - 3 A centrifuge with a diameter of 2 m rotates at a frequency of 30 s^{-1} Calculate centrifugal effect
 - 4 Enlist the factor affecting on rate of drying.
 - 5 Write advantages of steam as heating medium.
 - 6 Differentiate distillation and drying.
- Q.2** (a) Write the difference between unite operation and unite process. 04
- (b) Explain the Amagat's law of additive volumes. 05
- (c) Derive the $PV=nRT$. 05
- Q.3** (a) Discuss the factors affecting of rate of filtration. 04
- (b) Write the principal, construction, working, advantage, disadvantage and applications of rotary drum filter. 05
- (c) Write the pharmaceutical applications of filtrations. 05
- Q.4** (a) Define centrifuge and Write the applications centrifuge. 04
- (b) Drive the centrifugal effect equation. 05
- (c) Write the principal, construction, working, advantage, disadvantage and applications of perforate basket centrifuge. 05
- Q.5** (a) Write the applications of drying in pharmaceutical industries. 04
- (b) Describe the freeze dryer. 05
- (c) Write the difference between tray dryer and spray dryer. 05
- Q. 6** (a) Write the difference between centrifugation and filtrations. 04
- (b) Write the principal, construction, working, advantage, disadvantage and applications of conical disc centrifuge. 05
- (c) Write the principal, construction, working, advantage, disadvantage and applications of vacuum dryer. 05

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| Q.7 | (a) | Explain Stefan Boltzmann Law along with its derivation. What is black body? | 04 |
| | (b) | Derive an equation for Log Mean Temperature Difference. | 05 |
| | (c) | Explain briefly various modes of heat transfer. | 05 |