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(2063)

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**B. Pharmacy (Ayurveda) 4th Semester Examination**

**Principles of Pharmaceutical Operations**

**IV**

**Time : 3 Hours**

**Max. Marks : 90**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

1. Answer any ten:

- (a) What is sensible heat of steam?
- (b) Define phase diagram.
- (c) What is unit operation?
- (d) Define mole volume.
- (e) Define overall heat transfer coefficient.
- (f) Define mixing index.
- (g) Difference between dry and wet steam.
- (h) Define boiler capacity.
- (i) Define material balance.
- (j) Define humidity.
- (k) Shell tube heat exchanger.
- (l) Define psychrometry.

**(2×10)**

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**[P.T.O.]**

2. Answer any two of the following:
- (a) Describe Principle, Construction, working of non washing and washing type plate and frame filter press.
  - (b) What are the different equipments available for mixing of solids and solids for pharmaceutical preparations?
  - (c) With the help of diagram discuss the construction and working of climbing and falling film evaporators. **(2×12½)**
3. Write a note on any two of the followings:
- a) Explain the construction and working of float actuated device to measure the flow level.
  - (b) Discuss with a diagram the construction and working of multiple tube heat exchangers.
  - (c) With the help of suitable diagram explain about multistage extraction. **(2×10)**
4. Answer any five of the following
- (a) What is azeotropic and extractive distillation? Explain with the help of suitable examples.
  - (b) Narrate the various factors affecting size reduction.
  - (c) Compare freeze drying with spray drying.
  - (e) Enumerate various types of manometers.
  - (f) Write a note on perforated basket centrifuge. **(5×5)**