

Total number of printed pages – 4 **B. Pharm**
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Fourth Semester Examination – 2008

BASIC ENGINEERING – II
(Unit Operations – II)

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory
and any **five** from the rest.*

*The figures in the right-hand margin
indicate marks.*

1. Answer the following questions : 2 × 10
- (a) Differentiate between humidity and relative humidity.
- (b) Define humid heat with mathematical expression.



- (c) Define dry bulb and wet bulb temperature.
- (d) How are losses of energy due to contraction in cross section is measured ? Explain with relevant equation.
- (e) What is a pressure head ? How is it calculated ?
- (f) What is water hammer ?
- (g) Define Nucleation.
- (h) Define crystal lattice and crystal habit.
- (i) Differentiate between sedimentation and filtration centrifuge.
- (j) Differentiate between venturimeter and orifice meter.
2. (a) What are the properties of glass ?
What are its applications as material of construction ? 5

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Contd.

- (b) What are the possible industrial hazards?
How can they be controlled? 5
3. Explain the theory and nature of discharge of reciprocating pumps. Describe the construction and working of a double action reciprocating pump. 2+2+6
4. Differentiate between fluid statics and fluid dynamics. Derive the Bernoulli's equation stating the assumption. 2+8
5. (a) Describe the principle, construction, working and uses of Krystal Crystallizer. 6
- (b) What is caking of crystals? Explain the factors affecting and preventive measures of caking. 4
6. Explain the theory of Centrifugation. Describe the principle, construction, working and uses of a supercentrifuge. 5+5

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7. (a) Describe the important features of humidity chart. 5
- (b) Explain the principle of dehumidification. Write a note on application of dehumidification. 5
8. Name the devices used for transportation of solids. Describe the principle, construction, working and applications of Pneumatic conveyer. 2+8

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