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PHM-1.2.3

PHARMACEUTICAL CHEMISTRY-II
(Physical Chemistry)

(B.Pharmacy., 2nd Semester, 2055)

Time : 3 Hours

Maximum Marks : 80

Note :- Section A is compulsory. Attempt any *Four* questions from Section B and any *Three* questions from Section C.

Section-A

Marks : 2 Each

- 1 (a) What is specific rotation ?
- (b) What is Charles law ?
- (c) Define refractive index.
- (d) What is the fundamental of steam distillation ?

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Turn Over

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(2)

- (e) What is optical exaltation ?
- (f) Define partial pressure.
- (g) What is cryoscopic constant ?
- (h) Define Conductance.
- (i) What is quantum yield ?
- (j) What are adsorption indicators ?
- (k) What is order of a reaction ?
- (l) What is effect of temperature on adsorption ?
- (m) Explain why reactions of higher order are rare.
- (n) What is Grotthus and Draper effect ?
- (o) What is autocatalysis ?

Section-B

Marks : 5 Each

2. Derive phase rule thermodynamically.

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3. The boiling point of a solution containing 0.20 g of a substance X in 20.00 g of ether is 0.17 K higher than that of pure ether. Calculate molecular weight of X. Boiling point constant of ether per 1 kg is 2.16 K.
4. A sample of camphor used in the rast method of determining molecular weight had a melting point of 176.5°C. The melting point of a solution containing 0.522 g camphor and 0.0386 g of an unknown substance was 158.8°C. Find molecular weight of substance. K_f of camphor per kg is 37.7.
5. What is dipole moment ? How is it useful in the elucidation of molecular structure ?
6. Deduce the relationship between critical temperature and van der Waal's constants.

Section-C Marks : 10 Each

7. What is Optical Activity ? What is its relationship with specific rotation ? What is the cause of optical activity ? Illustrate the principle, construction and working of polarimeter.

8. What are postulates of quantum mechanics ?
What are its applications ?
9. (a) Define cell constant, specific conductivity
and equivalent conductivity.
(b) What do you understand by term phase ?
10. (a) Derive an equation of Beer-Lambert law.
(b) Write a note on adsorption isotherm.