Registration No : | | | | | | | | | | |

Total number of pages : 01 **B.Tech.**
PECE5406

8th Semester Regular / Back Examination 2017-18
MODERN SEPARATION TECHNIQUES
BRANCH : CHEM
Time : 3 Hours
Max Marks : 70
Q.CODE : C532

Answer Question No. 1 which is compulsory and any FIVE from the rest.
The figures in the right-hand margin indicate marks.
Answer all parts of a question at a place.

Q1. **Answer the following questions :** **(2 x 10)**

(a) Name a membrane process in which phase change takes place.
(b) What is glass transition temperature ?
(c) How much pressure is required to desalinate water ?
(d) Why is nanofiltration also known as loose RO ?
(e) State the MWCO range for UF membranes.
(f) What is the driving force in dialysis ?
(g) In which state of polymer, more sorption of gas takes place ?
(h) Show the profile for pressure gradient inside the membrane during pervaporation.
(i) Define limiting current density.
(j) What is the role of a surfactant in emulsion liquid membrane ?

Q2. Discuss in detail the micro porous, asymmetric, and inorganic membranes. **(10)**

Q3. Discuss in detail the parameters affecting the performance of nanofiltration membranes. **(10)**

Q4. Discuss the important applications of ultrafiltration in detail. **(10)**

Q5. Discuss in detail the factors affecting gas permeation. **(10)**

Q6. Discuss the basic operating principle of electro dialysis process with a neat diagram. **(10)**

Q7. **(a)** Briefly discuss the applications of electro dialysis. **(5)**
(b) Write a short note on Emulsion Liquid Membranes. **(5)**

Q8. **Write short notes on any TWO :** **(5 x 2)**

(a) Advantages of membrane processes
(b) Concentration polarization
(c) Cross-flow microfiltration
(d) Hemodialysis