

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

Roll No .....

## **CM-5005(4)-CBGS**

### **B.E. V Semester**

Examination, June 2020

## **Choice Based Grading System (CBGS)**

### **Membrane Separation Technique**

*Time : Three Hours*

*Maximum Marks : 70*

**Note:** i) Attempt any five questions.

ii) All questions carry equal marks.

1. Membrane fouling and concentration polarization can deteriorate a membrane's performance. List 4 measures that can be implemented to counteract these problems.
2. a) Explain the following methods of preparation of membranes.
  - i) Sintering
  - ii) Track etching
  - iii) Template leachingb) Explain the following methods of preparation of composite membranes.
  - i) Interfacial polymerisation
  - ii) Dip coating
  - iii) Plasma polymerisation
3. a) Compare the performance of membrane separation process with conventional methods of separation.  
b) Define - selectivity and volume flux of a membrane. Explain how they represent efficiency of membrane.

CM-5005(4)-CBGS

PTO

[2]

4. a) State the factors which determine thermal and chemical stability of membrane.  
b) What is synthetic membrane? How it is prepared?
5. a) Explain synthesis of composite membranes.  
b) Explain synthesis of inorganic membranes.
6. a) Define transport through porous membranes.  
b) Define transport through non-porous membranes.
7. Distinguish between solution-diffusion model for transport through non porous membrane and pore flow model for porous membranes. State the assumptions used any necessary equations.
8. Write short note on the following synthesis methods :
  - a) Inorganic membranes
  - b) Asymmetric membranes

\*\*\*\*\*

CM-5005(4)-CBGS