Test for Reaction Engineering-II
29th Oct, 2020
Time: 45 min, Marks: 20

1. a)What is bidispersed pore in a solid catalyst?
   b) Write in brief the determination of pore volume by N_2 desorption-Hg penetration method for a bidispersed catalyst.
   c) How pelleting pressure affects pore radius?

   d) Low temperature (-195.8C) nitrogen adsorption data were obtained for an

   Fe-Al_2O_3 catalyst. The results for a 50.4 g catalyst were:

Pressure, mm Hg	8	30	50	102	130	148	233	258
Volume adsorbed CC (at 0 C and 1 atm)	103	116	130	148	159	163	188	198

Estimate the surface area for this catalyst. Density of N_2 is 0.808 g/c.c and projected area of a N_2 molecule is $16.2 \times 10^{-16}\ cm^2/molecule$. The volume per unit mole at the condition of adsorption is 22400 cc. [1+3+2+6=12]

2. Define and explain in brief about: [4x2=8]

a) Catalyst supports
b) Promoters
c) Inhibitors
d) Stabilisers