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Roll No.....

EIGHTH SEMESTER

B. Tech. [PT]

MID SEMESTER EXAMINATION

MARCH- 2019

PT416 PROCESS DESIGN AND ENGINEERING ECONOMICS

Time: 1:30 Hours

Max. Marks: 25

Note: Answer all questions. .
All questions carry unequal marks. Draw neat diagram wherever necessary. Assume suitable missing data, if any.

- 1 [A] Write six steps for the design of a chemical process. [1]
- [B] Write four processes along with examples. [1]
- [C] How are chemical products classified? [1]
- [D] What is the difference between commodity chemical and specialty chemical? [1]
- [E] What is a grass root project? [1]

- 2 [A] Write the important points in basic process operations. [2]
- [B] What are the principles of similarity in the scale up procedure? [2]
- [C] Graphically represent optimum economic pipe diameter for constant mass throughput. [2]
- [D] Discuss the BFD of activated sludge process. [2]

- 3 [A] Show that a minimum surface area A to enclose a given volume V of a cylinder is obtained when its length is equal to its diameter. [4]
- [B] In desalination plant an evaporator of 200 m² was purchased in 1996 at a cost of Rs. 3,00,000. In 2002 another evaporator of area 50 m² was added. What was the cost of second evaporator in rupees? Assume that the cost of evaporator scales as (capacity)^{0.54}. The price index was 1048.5 in 1996 and 1116.9 in 2002. [2]

P.T.O.

- 4 [A] A storage tank was priced at Rs.5000 in 1982 when cost index was 460. What is the value today when cost index is 800.
- [B] A process plant has an initial investment of Rs.50 lakhs. The estimated salvage value is Rs. 2 lakhs. It has a life of 8 years. Estimate the book value after 5 years by straight line method.

END