

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE – OCTOBER/NOVEMBER-2018.PARTICLE TECHNOLOGY

(Maximum Marks : 100)

Time : 3 Hrs

**PART-A**  
(Maximum marks: 10)

Marks

**I.** Answer all questions in one or two sentences. Each question carries 2 marks.

1. Define constant volume filtration.
2. List the essential components of a centrifuge machine.
3. Define angle of nip.
4. Define power number.
5. Define minimum fluidization velocity.

(5X2=10)

**PART - B**  
(Maximum Marks : 30)**II** Answer any five of the following questions. Each question carries 6 marks.

1. List the factors on which rate of filtration depends.
2. State the principle of filtration.
3. Compare Blake and Dodge crusher.
4. Draw the sketch of different Trommel arrangements.
5. Describe floatation equipment.
6. Describe V-type mixer.
7. With a neat sketch describe fluidized bed catalytic cracking.

[5x6 =30]

**PART - C**  
(Maximum marks : 60)

(Answer one full question from each unit. Each full question carries 15 marks)

**UNIT I**

- III** (a) Describe washing process of plate and frame filter press. (7)
- (b) Describe the working of Sand filter. (8)

OR

- IV (a) Draw the sketch of top driven centrifuge. (7)  
(b) Describe the working of super centrifuge. (8)

UNIT- II

- V (a) Draw the sketch of smooth roll crusher. (7)  
(b) Describe the working of single roll crusher. (8)

OR

- VI (a) Illustrate the working of gyratory crusher. (7)  
(b) A certain crusher accepts a feed material having a volume-surface mean diameter of 19mm and gives a product of volume-surface mean diameter of 5mm. The power required to crush 15 tonnes per hour is 7.5 kW. What will be the power consumption if the capacity is reduced to 12 tonnes per hour. (8)

UNIT- III

- VII (a) Explain magnetic separator. (7)  
(b) Draw the flow sheet of floatation plant using rougher, scavenger and cleaner. (8)

OR

- VIII (a) Draw and explain Banbury mixer. (7)  
(b) Illustrate the working of kneading machine. (8)

UNIT - IV

- IX (a) Describe the working of screw conveyor. (7)  
(b) Compare elevators and chain conveyors. (8)

OR

- X (a) Describe the fluidized bed oil conversion. (7)  
(b) Draw the sketches of some types of roofs of atmospheric storage tank. (8)

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