Note: Attempt five questions

Q1: (20 marks)
A- What is the mean of precipitation from aqueous solution? (10 marks)
B- What is the main disadvantage of infiltration? and who can be avoided? (10 marks)

Q2: (20 marks)
A- What are the essential requirements in choosing a suitable infiltrant? (10 marks)
B- Explain briefly the following sentence: - (10 marks)
"Particle shape has a pronounced effect on the packing of a powder"

Q3: (20 marks)
A- What is the sequence of operation for cycle compacting? (10 marks)
B- Why the excessive blending is undesirable? (10 marks)

Q4: (20 marks)
A- Explain the atomization process for powder manufacture? (10 marks)
B- Write True and False for the following sentences with correct the erroneous sentences:-
  1. Apparent density can vary from (20-50%) of the tap density.
  2. Crushing method is mostly used for the disintegration of oxides and brittle materials.
  3. Adhesion mechanism between metal surfaces is an elementary bonding process which
does involve material transport.
  4. Spinning riffler process consists of opened ring of containers spinning.
  5. Sintering process may be defined as the heating of loose or compacted aggregate of metal
powders below the melting point of the base metal.

Q5: (20 marks)
A- What is the difference between wet bag and dry bag tooling? (10 marks)
B- 1. What is the function of the binding material used for powder extrusion technique?
   2. What is the advantage for used vacuum in hot pressing? (5 marks)

Q6: (20 marks)
A- What are the advantages of liquid phase sintering? (10 marks)
B- What are the types of electro deposition? (10 marks)

....................GOOD LUCK....................