

Roll No: -----

**UNIVERSITY OF PETROLEUM  
AND ENERGY STUDIES**



**End Semester Examination, December 2017**

**Program: B. Tech (Mining Engg)**

**Semester –Vth**

**Subject (Course): Mineral Processing Technology**

**Max. Marks : 100**

**Course Code : GESG 316**

**Duration : 3 Hrs**

**No. of page/s: 02**

**Instructions:**

- a. Answers should carry the equations and diagrams, wherever necessary
- b. In Section A, all questions are compulsory
- c. In Section B, first 4 are compulsory, attempt any one from Q-7
- d. In section C, all questions are compulsory

**Section: A**

**20 Marks**

Each question carries 03 marks

(3\*5=15 Marks)

1.
  - a) Does peptization has any bearing upon dewatering?
  - b) What is the difference between pneumatic & baum jig?
  - c) What are thiois & where they are used?
  - d) How SEM is different from TEM?
  - e) Which physical property of mineral decides the flotation efficiency & how?
2. Fill in the blanks  
(1\*5=05 Marks)
  - a. Lanthanum hexaboride is an example of -----
  - b. Barrel washer is used for-----
  - c. Drum filter with belt discharge is used for -----
  - d. Ferromagnetism is a special case of -----
  - e. The gap between the jaws at the receiving end is known as -----

**Section: B**

(8\*5= 40 Marks)

3. With neat sketch, show the working of Drum filter

4. Is Mineral Processing directly related to Mining, yes/ no, justify
5. Discuss the versatility of column flotation cell above mechanical flotation cell
6. How  $p^H$  of the pulp guides flotation, discuss
7. Hydrocyclones are designed to handle the finest range of particles, why is it not in use in dewatering of the same?

Or

Establish the relationship between phase & path difference in XRD.

**Section: C**

(40 Marks)

8. Why wet high magnetic separators are superior over dry HMS from industry point of view? WHIMS can substitute Flotation, but still not preferred in some instances, why? (7+3)
9. Company named ABC deals with Iron ore. The major production is in the form of fines (300 micron). Ore type is hematite (56% Fe), essentially. Suggest the suitable technique/ techniques to make it user ready with suitable justification. (10 marks)
10. Oxides of Cu can't be floated using sulphhydryl collectors, why? What recourse measure needs to be taken for the same? (5+15)

Or

Examine & outline the significance of nip angle in Roll Crusher. Crushing should always followed by Grinding, true/ false, substantiate. (10+10)

