



UNIVERSITY
OF
JOHANNESBURG

PROGRAM : NATIONAL DIPLOMA
IN EXTRACTION METALLURGY
SUBJECT : MINERAL PROCESSING II

CODE : MPR 2A20

DATE : SUMMER SSA EXAMINATION
02 Dec 2014

DURATION : (SESSION 2) 11:30 - 13:30

WEIGHT : 50:50

FULL MARKS : 80

TOTAL MARKS : 100

EXAMINER : Dr. W. NHETA

MODERATOR : MR M. HENDERSON

NUMBER OF PAGES : 2 PAGES

INSTRUCTIONS TO STUDENTS:

1. ANSWER ALL QUESTIONS.
 2. DRAW NEAT DIAGRAMS AND WRITE CLEARLY, MARKS CAN BE DEDUCTED FOR UNTIDY WORK.
-

MINERAL PROCESSING II. MPR2A20 (SSA)

Question 1

- 1.1 Name the four most important methods of transporting ore (4)
- 1.2 For each, give one advantage and two disadvantages. (12)
- 1.3 Illustrate Arching or Bridging and Doming in silos (4)

[20]

Question 2

- 2.1 What are the material factors affecting the performance of industrial screening. (4)
- 2.2 State and explain 7 uses of screens in mineral processing. (14)
- 2.3 With the aid of a block diagram, discuss the operation and difference between open circuit and closed circuit size reduction. (10)

[28]

Question 3

- 3.1 Briefly explain with examples the concept “dewatering” as applied to hydrometallurgical operations. (5)
- 3.2 The Hydrocyclone has become one of the most important Mineral Processing device in the last 30years. Justify this assertion and describe the principles of operation of the Hydrocyclone. (15)

[20]

Question 4

- 4.1 Briefly explain how the following factors affect filtration
- i. Area of cloth (2)
 - ii. Viscosity of the slurry (2)
 - iii. Flow resistance of the cake (2)
 - iv. Flow resistance of filter media/support (2)
 - v. Flocculants/filter aids (2)
 - vi. Pulp density (2)

[12]

Total Marks 80