Total No. of Printed Pages:2

SUBJECT CODE NO:- H-404
FACULTY OF SCIENCE AND TECHNOLOGY
S.E. (Chemical) (Sem-I)
Mechanical Operation
[Revised]

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B i) Q. no.1 and Q. no.6 are compulsory.
ii) Solve any two questions from remaining of each section.
iii) Draw well labeled diagram.

SECTION – A

Q.1 Explain the following
a) Mesh No 03
b) Kicks law 03
c) Open circuit operation 04

Q.2
a) Derive the formula $n_c = \frac{1}{2\pi}\sqrt{\frac{g}{R-r}}$ for calculating critical speed of ball mill. 08
b) What are the factors which affect size reduction of raw material in a ball mill? Explain. 07

Q.3 Explain any tour separation equipments which work on the principal of surface properties of particle. 15

Q.4 Explain the construction and working of following size reduction equipment 15
a) Jumbling Mill
b) Jaw crusher

Q.5 Write notes on: 15
a) Screen motions
b) Necessity of size reduction
c) Problem associated with handling of solids

SECTION – B

Q.6 Explain the following:
a) Filter Media 03
b) Jigging 03
c) Filtration 04

Q.7 Discuss basic principle involved in separation of ore by forth flotation method. What is the role of collectors, frothers and modifiers? 15

Q.8
a) What are preventive measures for reducing swirling in agitated tanks? 08
b) What are different types of impeller commonly used for agitation of liquids. 07

Q.9 a) What is the importance of mixing in industrial operations. 08

b) What is the principle and working of centrifugal separation? 07

Q.10 Write notes on: 15

a) Muller Mixer

b) Cyclone separator

c) Paramagnetic material