



UNIVERSITY
OF
JOHANNESBURG

PROGRAM

: NATIONAL DIPLOMA

ENGINEERING METALLURGY

SUBJECT

: **PHYSICAL METALLURGY II**

CODE

: **PMY22-2**

DATE

: SUPPLEMENTARY EXAMINATION

26 JULY 2016

DURATION

: (SESSION 2) 11:30 - 14:30

WEIGHT

: 40 : 60

FULL MARKS

: 85

TOTAL MARKS

: 85

EXAMINER

: Dr S C DU PLESSIS

MODERATOR

: MR C PALINHOS

NUMBER OF PAGES

: 2

INSTRUCTIONS

: ANSWER ALL QUESTIONS

QUESTION 1

1.1 Sketch the growth of pearlite and bainite and describe from which each originate (10 marks)

QUESTION 2

2.1 What are the principal advantages of austempering compared with the conventional quench and temper method ? (10 marks)

QUESTION 3

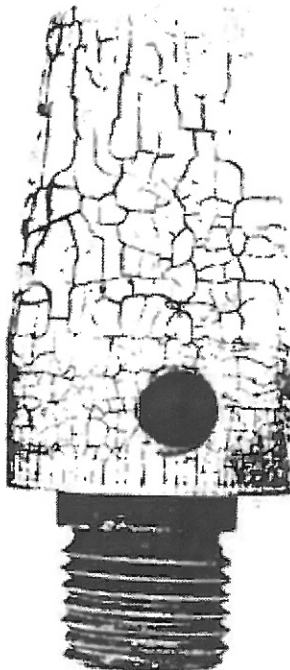
3.1 What is the significant difference in the nickel (Ni) content of Conventional Austenitic Stainless Steels and Duplex Stainless Steels. What affect does this difference have on the microstructure ?

(10 marks)

QUESTION 4

4.1 Describe the phenomena of creep with sketches and detail. (30 marks)

QUESTION 5



5.1 Explain the significance of this microstructure and what the cause was which occurred .

(25 marks)
