



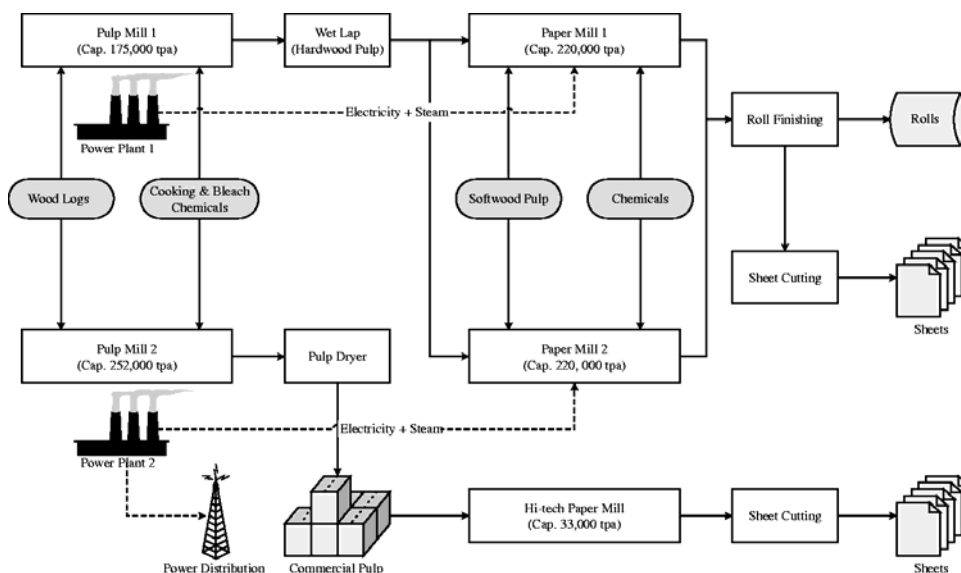
**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**DEPARTMENT OF APPLIED CHEMISTRY**  
**BACHELOR OF SCIENCE HONOURS DEGREE**  
**SUPPLEMENTARY EXAMINATIONS – AUGUST 2014**  
**INDUSTRIAL ORGANIC CHEMISTRY I – SCH 2215**  
**TIME: 3 HOURS**

**Instructions to candidates**

Answer any Four (4) Questions from the Five (5) provided. Each question carries 25 marks.

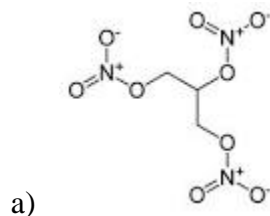
Start your answers to each question on a new page. This Paper comprises 2 printed pages.

1. Study the flowchart provided below and answer the questions that follow.

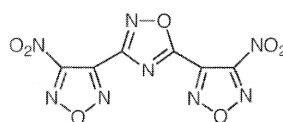


- Explain the process shown on this flowchart. (8 marks)
- Explain how electricity is generated at Plant 1 and Plant 2 respectively. (8 marks)
- Identify the chemicals that may find use at Pulp mills 1 & 2 and also at Paper mills 1 & 2. (9 marks)

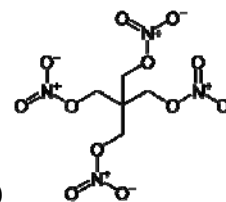
2. Explain the manufacturing processes and applications of the following explosives.

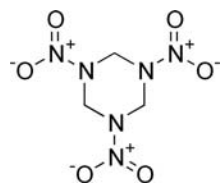


b)

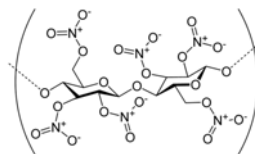


c)





d)



e)

(25 marks)

3. Explain how the following tests are carried out:

- a) Trauzl
- b) Brisance
- c) Float and sink
- d) Paper tensile strength
- e) Benzene gas chromatography

(25 marks)

4. a) Explain 6 general safety precautions when handling explosives.

(12 arks)

b) During coal tar distillation it is important to maintain hot conditions.

i. Explain why it is so. (3 marks)

ii. How are the hot conditions maintained throughout the coal tar plant? (5 marks)

(5 marks)

c) With the help of a sketch explain why it is difficult to separate toluene from xylene by distillation. (5 marks)

(5 marks)

5. a) What are 'naval stores'?

(3 marks)

b) Using a process flow chart explain the manufacturing process of any three naval stores. (12 marks)

(12 marks)

c) Draw the structure of furfural

(3 marks)

d) Explain the usage of furfural as herbicide and fungicide

(7 marks)

.....*THE END*.....