

THE OPEN UNIVERSITY OF SRI LANKA

B.Sc. DEGREE PROGRAMME – LEVEL 5

INDUSTRIAL CHEMISTRY - CMU3232

FINAL EXAMINATION 2013/ 2014

3 Hours



Date: 23. 11. 2014

Time: 9.30 a.m. – 12.30 p.m.

- This question paper consists of two sections. **Part I (Short questions)** and **Part II (Structured type)**
- **Part I** consists of **15** short questions; recommended time to complete this part is one hour.
- **Part II** consists of **six** questions; you are expected to answer **four(04)** questions including **one compulsory question** to be answered out of six. Recommended time to complete this part 2 hours.

**Part I (40 marks)**

Index Number.....

Staff signature.....

Answer all questions

1 .State **two** main types of industries based on rubber, giving **two** examples of products for each.

	Industry	Examples
(i)	.....	.....
(ii)	.....	.....

**(04 marks)**

2. Write **three** important features of the Ellingham diagram for oxides of elements.

.....

.....

.....

.....

.....

.....

(03 Marks)

- 3 Write balanced chemical equation for the conversion of apatite to **single super phosphates**?

.....  
.....

(02 marks)

4. How much water does a 300,000 ton capacity triple super phosphate factory require?

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

(04 marks)

5. For what specific purpose does a ball mill used in ceramic industry? How does it contribute to the production of quality ceramic ware?

.....  
.....  
.....  
.....

(04 marks)

6. Why is glass known as an amorphous substance?

.....  
.....  
.....  
.....

(02 marks)

7. Plant oils are broadly classified into two major categories; fixed oils and essential oils. Distinguish between fixed oils and essential oils.

.....

.....

.....

.....

(02 marks)

8. What type of plant materials could be used to extract essential oils using the water distillation method? Give reason for your answer?

.....

.....

.....

(02 marks)

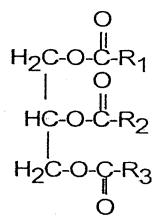
9. Give **two** value added products of  $\alpha$ - Pinene?

.....

.....

(02 marks)

10. Give **two** products that can be formed by interesterification of the following triglyceride?



interesterification  $\rightarrow$  .....

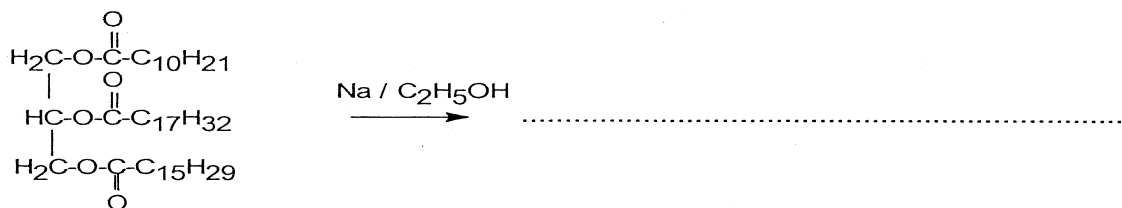
(02 marks)

11. What physical property of the triglyceride would change due to interesterification?

.....

(02 marks)

12. Write down the product(s) of the following reaction.



(03 marks)

13. What is meant by refining of petroleum?

.....  
 .....

(02 marks)

14. What is major refining technique? Briefly explain this method.

.....  
 .....

(04 marks)

15. Distinguish between cracking and reforming.

.....  
 .....

(02 marks)

.....