

## FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2018

(CUCSS)

Chemistry

CH 4E 04—PETROCHEMICALS AND COSMETICS

(2015 Admissions)

Time : Three Hours

Maximum : 36 Weightage

**Section A***Answer all questions.**Each question carries 1 weightage.*

1. Define cetane number. What is its significance ?
2. What are the aromatic hydrocarbons obtained during petrochemical processing ?
3. How can glycerine be obtained industrially ?
4. What is the process of manufacture of phenol ?
5. How can sulfur containing compounds in petroleum be detected and estimated ?
6. Explain the treatment of residual liquid in distillation of petroleum.
7. What are the constituents of jet engine fuels ?
8. What are boiler oils ?
9. What is alkaline purification of petroleum ?
10. Explain petroleum purification using a direct current electric field.
11. Which compounds are used to fix delicate odors in perfumes ?
12. What is a skin chemical preparation ?

(12 × 1 = 12 weightage)

**Section B***Answer any eight questions.**Each question carries 2 weightage.*

13. Explain the (i) refining and (ii) reforming in petrochemical industry.
14. Describe the constituents of natural gas. What are its uses ?

**Turn over**

15. Explain the term "proof" of a spirit. How can absolute, rectified and methylated spirit be obtained.
16. Explain the chemical processes generally adopted in industrial organic synthesis of bulk chemicals such as ethylene glycol, acetaldehyde, formaldehyde and ethyl acetate.
17. What are the distillation curves ?
18. What are the steps involved in the preparation of petroleum for processing ?
19. How can dye intermediates be obtained from petroleum industry ?
20. Write an account of the liquefied petrochemical products obtainable from petroleum.
21. Write notes on sulphuric acid and alkaline purification methods in petroleum processing.
22. Explain briefly stabilization, hydrorefining and demercaptinisation during purification of petroleum.
23. Illustrate the recipe for (i) toothpaste and (ii) shampoo.
24. Write an account of the perfumes with attention to constituents, fixing and natural sources.

(8 × 2 = 16 weightage)

### Section C

*Answer any two questions.*

*Each question carries 4 weightage.*

25. Describe the various methods, their mechanism and operational details of petroleum cracking.
26. Discuss the chemical processing of alkene, alkyne and aromatic hydrocarbons.
27. Describe the classification and composition of petroleum crude.
28. Describe the distillation of petroleum with attention to equipment and products.

(2 × 4 = 8 weightage)