

[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 1524 E Your Roll No.....

Unique Paper Code : 217263

Name of the Course : B.Sc. (APS) Applied Physical Sciences

Name of the Paper : INDUSTRIAL CHEMISTRY (ICPT-202)

Semester : II

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt six questions in all.
3. Question No. 1 is compulsory.

1. Attempt any five of the following six questions :-

- (a) What are the advantages of catalytic cracking over thermal cracking ?
- (b) Give the composition and uses of producer gas.
- (c) Explain the term carbonization.
- (d) What is the viscosity index of a lubricant ? How is it determined ?
- (e) What do you understand by 'rancidity of oil' ?
- (f) Write a note on food preservatives. (3×5=15)

2. (a) What is the principle of fractional distillation ? Give the uses of any two fractions obtained after fractional distillation of crude petroleum.
- (b) Give the preparation and uses of vinyl acetate.
- (c) What are the advantages of gaseous and liquid fuels over solid fuels ? (4×3=12)

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3. (a) Why is hydrogenation of oil done ?
(b) How is calorific value of a fuel determined ?
(c) What are the requisites of a good metallurgical coke ?
(d) Write a note on petroleum reforming. (3×4=12)
4. Write short notes on any **three** of the following :
(a) surfactants
(b) synthetic lubricants
(c) acid value
(d) propylene oxide (4×3=12)
5. (a) Define the terms 'saponification' and 'saponification value'.
(b) Give the composition of bathing soap or liquid soap.
(c) Name any three artificial sweeteners and give their structures.
(d) Write a note on cloud point of a lubricant. (3×4=12)
6. (a) What do you understand by gasification of coal ?
(b) Name the different fractions obtained after distillation of coal tar.
(c) Write a note on LPG and CNG. (4×3=12)
7. (a) What are the differences between soaps and detergents ?
(b) Explain the function of detergent builders and give their three examples.
(c) Write a note on natural and synthetic colours used as food additives. (4×3=12)
8. (a) What do you understand by 'clean fuels' ?
(b) What are renewable and nonrenewable sources of energy ? Explain with the help of examples.
(c) Give the composition of crude petroleum. (4×3=12)