**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

DATE: **4** **-04-2018 (9AM)**

**SEMESTER EXAMINATION : APRIL 2018**

**IV SEMESTER**

**CH OE 4116 : Industrial and Material Chemistry**

This question paper has one printed page and three parts

(For supplementary candidates)

Do not write the register number on the question paper

Please attach the question paper along with the answer script.

**Time: 90min Max marks : 35**

**Part A**

Answer any five questions 5 x 1 = 5

1. What is the composition of cement?
2. What is coal?
3. What is smokeless powder?
4. What is a dynamite?
5. Name the chemical added to LPG to identify the leak from cylinders.
6. Name the metal ion which gives blue color to glass.
7. What is graphene?

**Part B**

Answer any ten questions 10 x 2 = 20

1. List the names of any two types of cement.
2. Explain setting and hardening of cement.
3. Write the classification (different types) of coal and give the approximate percentage of Carbon.
4. What are the advantages of gaseous fuel?
5. What is the difference between diffusion and osmosis?
6. What is GREY GOO?
7. Write one application of nanotechnology in textile industry.
8. Name two approaches of synthesizing nano materials.
9. What are refractories?
10. What do you mean by the term “thermal spalling” of refractories?
11. Write the classification of abrasives. Write one example each.
12. What will happen if (i) very little liquid soap is added to the hard water and shaken well. (ii) excess of liquid soap is added to the hard water and shaken well. Give reason for your observations.

**Part C**

Answer the following questions 2 x 5 = 10

1. (a)How is coal converted to coke in Beehive coke oven?

OR

(b)What is producer gas? How is it manufactured?

1. (a)Explain the chemistry behind the following experiment. Experiment: Distilled water was taken in two different beakers A & B. Few drops of calcium ion solution was added in both beakers. In beaker A zeolite was added and kept aside for 30 minutes. After 30 minutes, sodium carbonate was added. White precipitate was formed in beaker B and no precipitate was formed in beaker A.

OR

(b) Explain the manufacture of glass.