

Roll No. : ..!

Total No. of Questions : 9] [Total No. of Printed Pages : 4

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**B.E. I Semester (CGPA) Civil Engg.
Examination 2018**

ENGINEERING CHEMISTRY

Paper - CE-102

Time Allowed : Three Hours] [Maximum Marks : 60

Note : i) Question Paper consists of two parts (Part-A and Part-B)

ii) Answer All the question in Part-A

iii) Answer any five Questions from Part-B

Part -A

Q.1. Write short answers of the following: $5 \times 2 = 10$

- Write the advantages of catalytic cracking.
- Write the disadvantages of scale formation?
- Write about the synthetic lubricants?

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- Write the differences between addition and condensation polymer?
- Discuss the failure of refractory?

Part -B

$5 \times 10 = 50$

- Q.2. a) Discuss the various defects caused by hard water in boiler and the control?
- b) Calculate the quantity of lime and soda required for softening of 50,000 L of hard water containing : $MgCO_3 = 244$ ppm, $CaCO_2 = 250$ ppm, $MgCl_2 = 95$ ppm?

- Q.3. a) Write about the recovery of by product in Otto Hoff mans by product coke oven methods?
- b) Calculate the volume of the air required for the complete combustion of 1 cubic meter of producer gas, the composition of which by volume is H_2 45% CO 25% CH_4 11% N_2 42%?

- Q.4. a) Discuss the engineer properties of the nickel and copper alloy?

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- b) How is the Portland cement is manufactured discuss in proper manner?
- Q.5. a) What are the common constituents of the plastic and what are the engineering properties?
b) Natural rubber needs vulcanization, give the reason and engineering properties of buna N and silicon rubber?
- Q.6. a) Explain the following properties of lubricants used and discuss their significance?
i) Cloud and pour point
ii) Flash and fire point
b) Discuss the factor affecting the rate of corrosion?
- Q.7. a) Write the information about water pollution what are the point and non point sources of water pollution?
b) Describe the NMR spectroscopy and its application?

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- Q.8. a) Write an explanatory account on colorimetry.
b) Explain setting and hardening of cement.
- Q.9. a) What is cracking? Explain moving bed catalytic cracking process?
b) What is corrosion Explain cathodic metallic coating?



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