

**2 0 1 6**

( 5th Semester )

**CHEMISTRY****EIGHTH (B) PAPER [CHEM-354 (B)]****( Industrial Chemistry )***Full Marks : 75**Time : 3 hours***( PART : B—DESCRIPTIVE )***( Marks : 50 )**The figures in the margin indicate full marks  
for the questions*

1. (a) What is liquefied petroleum gas? How is it obtained? 3
- (b) With suitable illustration, describe the cleaning action of soap. 4
- (c) What are called detergents? Write any one method of preparation. 3

**OR**

2. (a) Describe the steps involved in the preparation of porcelain. 3
- (b) State some differences between basic refractories and acidic refractories. 3
- (c) State the differences between crystalline ceramics and noncrystalline ceramics. 2
- (d) What is called ceramography? 2
3. (a) What are microbial enzymes? Discuss their applications. 1+2=3
- (b) What is called fermentation? Briefly explain the process of fermentation of carbohydrates. 1+3=4
- (c) What is recombination? Discuss its function for the production of desirable trait. 1+2=3

**OR**

4. (a) What are the functions of lipids in the body? 2
- (b) What is food preservation? Discuss one method of food preservation. 1+2=3

( 3 )

- (c) Describe the process of conduction and convection as a mean of heat transfer. 3
- (d) How does refrigeration help preservation of fruits and vegetables? 2
5. (a) Describe the process of synthesis of trinitrotoluene (TNT). 3
- (b) What is gunpowder? Write its composition. 1+1=2
- (c) Write a note on 'treatment of tannery effluents'. 2
- (d) Discuss the use and origin of dynamite. 3

**OR**

6. (a) What is water pollution? Explain how water becomes polluted by use of fertilizers and pesticides. 1+2=3
- (b) Distinguish between hard water and soft water. Discuss one method of softening of hard water. 2+2=4
- (c) What is called biochemical oxygen demand? Explain how it is used to determine the amount of organic compounds in water. 1+2=3

( 4 )

7. (a) Discuss the composition and origin of coal. 2+2=4
- (b) Describe the steps involved for gasification of coal. 3
- (c) What is synthetic petrol? Describe one method of its preparation. 3

**OR**

8. (a) Discuss the importance of cracking for the commercial production of gasoline. 2
- (b) What is octane number? How is it related to the quality of fuel? 1+2=3
- (c) Differentiate between producer gas and water gas. 2
- (d) Briefly explain the process of refining of petroleum. 3
9. (a) Describe the preparation of polyamide. 3
- (b) What is PVC? Write two uses. 1+2=3
- (c) Distinguish between condensation polymers and addition polymers. Give one example each. 2+1=3
- (d) What is known as isoprene? 1

( 5 )

OR

10. (a) What are the important roles of textile designers? 3
- (b) Discuss some basic processes of fabric painting in textile industry. 4
- (c) Compare the characteristic features between polymer industry and textile industry. 3

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Subject Code :

**V / CHEM (viii) (B)**

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**Booklet No. A**

Date Stamp .....

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**To be filled in by the Candidate**

DEGREE 5th Semester  
(Arts / Science / Commerce /  
..... ) Exam., **2016**  
Subject .....  
Paper .....

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**To be filled in by the Candidate**

DEGREE 5th Semester  
(Arts / Science / Commerce /  
..... ) Exam., **2016**  
Roll No. ....  
Regn. No. ....  
Subject .....  
Paper .....  
Descriptive Type  
Booklet No. B .....

**INSTRUCTIONS TO CANDIDATES**

- 1. The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
- 2. This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
- 3. While answering the questions of this booklet, any cutting, erasing, overwriting or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

*Signature of  
Scrutiniser(s)*

*Signature of  
Examiner(s)*

*Signature of  
Invigilator(s)*

**V/CHEM (viii) (B)**

**2 0 1 6**

( 5th Semester )

**CHEMISTRY**

EIGHTH (B) PAPER [CHEM-354 (B)]

**( Industrial Chemistry )**

( PART : A—OBJECTIVE )

( Marks : 25 )

*The figures in the margin indicate full marks for the questions*

SECTION—A

( Marks : 10 )

Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

**1.** The major component of fireclay among the following is

(a)  $\text{SiO}_2$  ( )

(b)  $\text{Al}_2\text{O}_3$  ( )

(c)  $\text{MgO}$  ( )

(d)  $\text{CaO}$  ( )

**/140**

( 2 )

2. COD is commonly expressed in

- (a) kg/L ( )
- (b) g/L ( )
- (c) mg/L ( )
- (d) None of the above ( )

3. In natural gas, which one among the following occupies the highest percentage?

- (a) N<sub>2</sub> ( )
- (b) CH<sub>4</sub> ( )
- (c) CO<sub>2</sub> ( )
- (d) O<sub>2</sub> ( )

4. Amino acid is the building unit of

- (a) carbohydrates ( )
- (b) proteins ( )
- (c) vitamins ( )
- (d) lipids ( )

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( 3 )

5. The carbon content of anthracite is in the range

- (a) 50%–60% ( )
- (b) 37%–50% ( )
- (c) 25.2%–36.7% ( )
- (d) 92.1%–98% ( )

6. The science of fermentation is known as

- (a) Fermiology ( )
- (b) Cytology ( )
- (c) Fetology ( )
- (d) Zymology ( )

7. The pH range of optimum activity for enzyme is within a narrow range usually between

- (a) 1–3 ( )
- (b) 3–4 ( )
- (c) 5–9 ( )
- (d) 10–13 ( )

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( 4 )

8. The chemical used to prevent damage of skin by bacterial growth before tanning is

(a) di-thiocarbamates ( )

(b) trichloromethane ( )

(c) sodium carbonate ( )

(d) tri-nitrophenol ( )

9. The enzyme that catalyses the conversion of glucose to alcohol is

(a) invertase ( )

(b) zymase ( )

(c) amylase ( )

(d) protease ( )

10. Polyethylene belongs to

(a) addition polymer ( )

(b) condensation polymer ( )

(c) copolymer ( )

(d) None of the above ( )

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( 5 )

SECTION—B

( Marks : 15 )

Answer the following questions :

3×5=15

1. What are bio-fertilizers? Point out some of their advantages over chemical fertilizers.

( 6 )

2. Differentiate between micronutrients and macronutrients. Give examples.

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( 7 )

3. What is called mutation? How is it utilized for genetic improvement?

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( 8 )

4. Write a short note on rocket propellants.

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( 9 )

5. What is water gas? Give its two uses.

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G7—300/140

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