



11623

B.Sc. VI Semester Degree Examination, April/May- 2019

CHEMISTRY

PAPER - 6.1

Time : 3 Hours

Maximum Marks : 80

*Instructions to Candidates:*

1. Question paper has **four** sections. All four sections are compulsory
2. Answer for **all** sections should be written in the same answer book

**Section-A**

**(Inorganic, Organic, Physical)**

1. Answer any **Ten** of the following

**(10×2=20)**

- a) Define cullet. What is its function in the glass industry?
- b) What are an objectives of electroplating?
- c) What are the raw materials required for the manufactured of cement?
- d) Name the important minerals of thorium with its composition
- e) What is post precipitation?
- f) Define renaturation of proteins
- g) How arylamines react with aldehydes?
- h) What are Zwitter ions? Give example
- i) What are turn over number of enzymes?
- j) What is peptide bond? How it is formed
- k) What is LJP? Under what condition it can be eliminated?
- l) Define EMF
- m) What are semipermeable membrane? Give example
- n) Define standard electrode potential
- o) What are isotonic solutions?

[P.T.O.]





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**Section-B**

**(Inorganic)**

2. Answer any **Two** of the following (2×4=8)

- a) Explain the mechanism of setting and hardening of cement
- b) Explain the electroplating of chromium
- c) Discuss the conditions of precipitation

3. Answer any **Two** of the following: (2×6=12)

- a) Describe the extraction of Uranium from pitch blende
- b) What is glass? How glass is manufactured?
- c) Write a note on
  - i) Dilution
  - ii) Filtration
  - iii) Washing of Precipitate

**Section-C**

**(Organic)**

4. Answer any **Two** of the following (2×4=8)

- a) Explain the separation of amines by Hinsburg method
- b) Give the synthesis of aminoacids from phthalimide and malonic ester synthesis
- c) How peptide is synthesized from carbobenzoxy method?

5. Answer any **Two** of the following : (2×6=12)

- a) How is benzene diazonium chloride prepared? Give any three synthetic applications of it.
- b) What are enzymes? Explain the factors affecting the rate of enzymatic reactions
- c) Explain the primary and secondary structure of proteins





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**Section-D**

**(Physical)**

6. Answer any **Two** of the following (2×4=8)

- a) Describe Berkeley and Hartley's method of measuring osmotic pressure
- b) Deduce the relation between molecular weight and depression in freezing point
- c) Discuss potentiometric acid base titrations in detail.

7. Answer any **Two** of the following : (2×6=12)

- a) Define Raoult's law and derive the relation between lowering of vapour pressure and molecular weight of the dissolved solute.
  - b) Explain the method to determine the relative lowering of vapour pressure by Ostwald-Walker method
  - c) Deduce an expression for the EMF of concentration cell with transference
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B.Sc. VI Semester Degree Examination, May - 2018

CHEMISTRY

Paper - 6.1

Time : 3 Hours

Maximum Marks : 80

**Instructions to Candidates:**

- 1) Question paper has **four** sections. All sections are **compulsory**.
- 2) Answer for **all** sections should be written in the same answer book.

**Section - A**

**(Inorganic, Organic and Physical)**

1. Answer any **Ten** of the following:

(10×2=20)

- a) What is Co - Precipitation?
- b) What is Glass? give the types of glass.
- c) What are the raw materials used for manufacture of cement?
- d) What is the principle of electroplating?
- e) Name the important minerals of uranium and give its composition.
- f) How uniline is prepared from Nitrobenzene.
- g) How amino acids are classified? Give examples?
- h) Give the classification of enzymes?
- i) What is denaturation of protein?
- j) Define isoelectric point?
- k) Define osmosis and osmotic pressure?
- l) State Raoult's law?
- m) Give types of electrodes.

P.T.O



(2)



- n) Define ebullioscopic constant.
- o) Write Nernst equation of electrode potential?

**Section - B****(Inorganic)**

(2×4=8)

2. Answer any **two** of the following :

- a) How Nickel is electroplated?
- b) Explain the Manufacture of glass and give its important uses.
- c) What is post - precipitation and what are the conditions of precipitation?

3. Answer any **two** of the following :

(2×6=12)

- a) Explain Extraction of Thorium from its ores?
- b) How cement is Manufactured by Dry process?
- c) Explain effect of temprature, P<sup>H</sup> and complex formation of the solution on the solubility of preeipitates

**Section - C****(Organic)**4. Answer any **two** of the following :

(2×4=8)

- a) Give the synthesis of amino acides by *malonic* onelonicester method.
- b) What are active sites? Explain the mechanism of enzyme action?
- c) Give the classification of protein and explain structure of primary and secondary amines?

5. Answer any **two** of the following :

(2×6=12)

- a) Explain Gabbriels phthalimide reaction and Hotmann's bromide reaction?
- b) How peptide is synthesised from carbo, benzoxy method?
- c) Give the characteristics features of enzymes and Explain non - compitative inhibition?



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## Section - D

## (Physical)

6. Answer any **two** of the following : (2×4=8)

- a) What is a semipermeable membrane? How artificial semipermeable membrane is prepared?
- b) Explain the Determination of osmotic pressure by Berkly and Hartley method.
- c) Explain potentiometric titration of acids and base.

7. Answer any **two** of the following : (2×6=12)

- a) Explain How Depression in freezing point is Determined by Beckmann's method.
- b) Describe how hydrogen electrode is used for the measurement of PH of aqueous solution, omd what are advantages of this electrode.
- c) Explain ostwald's and walker's method for determination of relative lowering of vapour pressure.



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**B.Sc. VI Semester Degree Examination, May/June 2017**  
**Paper – 6.1 : CHEMISTRY**

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) Question paper has **four** Sections. **All** Sections are **compulsory**.  
2) Answers for **all** Sections should be written in the **same** answer book.

**SECTION – A**  
**(Inorganic, Organic, Physical)**

(10×2=20)

1. Answer **any ten** of the following :

- What are the raw materials required for the manufacture of cement ?
- Name the important minerals of thorium with its composition.
- What are the objectives of electroplating ?
- Mention various types of glass.
- What is co-precipitation ?
- How aryl amines are reacting with aldehydes ?
- Define denaturation of proteins.
- What is diazocoupling reaction ?
- What are cofactors ?
- Define isoelectric point.
- Define turnover number.
- What are colligative properties ?
- What are isotonic solutions ?
- Define ebullioscopic constant.
- Define EMF.

P.T.O.





SECTION – B  
(Inorganic)

2. Answer **any two** of the following :

(2×4=8)

- Explain the electroplating of nickel.
- Discuss the raw materials required for the manufacture of glass.
- Discuss the conditions of precipitation.

3. Answer **any two** of the following :

(2×6=12)

- Explain the manufacture of cement by dry process.
- Explain the extraction of thorium from its ore.
- Write a note on :
  - Filtration
  - Washing
  - Drying of precipitate.

SECTION – C  
(Organic)

4. Answer **any two** of the following :

(2×4=8)

- Explain the preparation of amines from Gabriel Phthalimide and Hofmann's degradation method.
- Give the synthesis of peptide from carbobenzoxy method.
- Explain the factors affecting the rate of enzymatic reaction.

5. Answer **any two** of the following :

(2×6=12)

- Explain the classification of amines with examples and explain the stereochemistry of amino nitrogen.
- How is peptide structure determined ?
- Explain the primary and secondary structure of protein.





SECTION - D  
(Physical)

6. Answer **any two** of the following :

(2×4=8)

a) What is osmosis ? Calculate the osmotic pressure of a 5% solution of cane sugar at 288 K.

$R = 0.082 \text{ lit atm K}^{-1} \text{ mol}^{-1}$  (Mol. wt. = 342)

b) Derive Nernst equation.

c) Write a note on standard hydrogen electrode.

7. Answer **any two** of the following :

(2×6=12)

a) Describe the determination of molecular mass of solute by Ostwald-Walker's method.

b) i) What is Van't-Hoff factor ?

ii) Discuss the cause for abnormal behaviour of solute in solution.

c) Deduce an expression for EMF of electrolyte concentration cells with transference.

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B.Sc. VI Semester Degree Examination, May/June 2017  
Paper – 6.1 : CHEMISTRY

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) Question paper has **four** Sections. **All** Sections are **compulsory**.  
2) Answers for **all** Sections should be written in the **same** answer book.

SECTION – A  
(Inorganic, Organic, Physical)

1. Answer **any ten** of the following : (10×2=20)
- What are the raw materials required for the manufacture of cement ?
  - Name the important minerals of thorium with its composition.
  - What are the objectives of electroplating ?
  - Mention various types of glass.
  - What is co-precipitation ?
  - How aryl amines are reacting with aldehydes ?
  - Define denaturation of proteins.
  - What is diazocoupling reaction ?
  - What are cofactors ?
  - Define isoelectric point.
  - Define turnover number.
  - What are colligative properties ?
  - What are isotonic solutions ?
  - Define ebullioscopic constant.
  - Define EMF.

P.T.O.



SECTION – B  
(Inorganic)

2. Answer **any two** of the following :

(2×4=8)

- a) Explain the electroplating of nickel.
- b) Discuss the raw materials required for the manufacture of glass.
- c) Discuss the conditions of precipitation.

3. Answer **any two** of the following :

(2×6=12)

- a) Explain the manufacture of cement by dry process.
- b) Explain the extraction of thorium from its ore.
- c) Write a note on :
  - i) Filtration
  - ii) Washing
  - iii) Drying of precipitate.

SECTION – C  
(Organic)

4. Answer **any two** of the following :

(2×4=8)

- a) Explain the preparation of amines from Gabriel Phthalimide and Hofmann's degradation method.
- b) Give the synthesis of peptide from carbobenzoxy method.
- c) Explain the factors affecting the rate of enzymatic reaction.

5. Answer **any two** of the following :

(2×6=12)

- a) Explain the classification of amines with examples and explain the stereochemistry of amino nitrogen.
- b) How is peptide structure determined ?
- c) Explain the primary and secondary structure of protein.





SECTION - D  
(Physical)

Answer **any two** of the following :

- a) What is osmosis ? Calculate the osmotic pressure of a 5% solution of cane sugar at 288 K. (2×4=8)

$R = 0.082 \text{ lit atm K}^{-1} \text{ mol}^{-1}$  (Mol. wt. = 342)

- b) Derive Nernst equation.  
c) Write a note on standard hydrogen electrode.

Answer **any two** of the following :

(2×6=12)

- a) Describe the determination of molecular mass of solute by Ostwald-Walker's method.

- b) i) What is Van't-Hoff factor ?  
ii) Discuss the cause for abnormal behaviour of solute in solution.

- c) Deduce an expression for EMF of electrolyte concentration cells with transference.
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B.Sc. VI Semester Degree Examination, May/June 2016  
6.1 : CHEMISTRY

Time : 3 Hours

Max. Marks : 80

**Instructions :** 1) Question paper has **four** Sections. **All** Sections are **compulsory**.  
2) Answer for **all** Sections should be written in the **same** answer book.

SECTION – A  
(Inorganic, Organic and Physical)

(10×2=20)

1. Answer **any ten** of the following :

- Define a cullet. What is its function in the glass industry ?
- What is electroplating ?
- Explain the role of Gypsum in cement.
- What is post-precipitation ?
- Give the chief minerals of Uranium.
- What are zwitter ions ? Give example.
- How aniline is prepared by nitrites ?
- How amino acids are classified ? Give example.
- What is the difference between peptides and proteins ?
- What is non-competitive inhibition ?
- Define osmotic pressure.
- State relative lowering of vapour pressure.
- Define Vant-Hoff factor.
- What is meant by liquid junction potential ?
- What kind of electrodes are called as (Redox) reference electrode ?

SECTION – B  
(Inorganic)

(2×4=8)

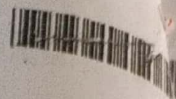
2. Answer **any two** of the following :

- How is gold extracted by hydrometallurgy ?
- Write a note on co-precipitation.
- Give the manufacture of glasses and its uses.

P.T.O.



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3. Answer **any two** of the following : (2×6=12)
- Describe the extraction of uranium from pitchblende.
  - Explain affect of temperature pH and complex formation of the solution on the solubility of precipitates.
  - What is portland cement ? Explain mechanism of setting and hardening of cement.

SECTION – C  
(Organic)

4. Answer **any two** of the following : (2×4=8)
- Explain the separation of amines by Heisenberg method.
  - Give the synthesis of amino acids by phthalimide or melanic ester method.
  - What are active sites ? Explain the mechanism of enzyme action.
5. Answer **any two** of the following : (2×6=12)
- How is benzene diazonium chloride prepared ? Give two synthetic application of it.
  - What is denaturation ? How are proteins classified according to composition ?
  - Write a note on :
    - Turnover number
    - Non-competitive inhibition or co-factors.

SECTION – D  
(Physical)

6. Answer **any two** of the following : (2×4=8)
- Deduce the relation between molecular weight and elevation in boiling point by using Clausius-Clayperson equation.
  - Write a note on calomel electrode.
  - Discuss potentiometric acid-base titrations in detail.
7. Answer **any two** of the following : (2×6=12)
- What is osmosis ? Describe Berkley and Heartley's method of measuring osmotic pressure.
  - Deduce the relation between molecular weight and depression in freezing point.
  - Describe how hydrogen electrode is used for the measurement of pH of aqueous solutions. What are the advantages and disadvantages of this electrode ?





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**B.Sc. VI Semester Degree Examination, May/June 2015**  
**Paper – 6.1 : CHEMISTRY**

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) Question paper has **four** Sections. **All** Sections are **compulsory**.  
2) Answer for **all** Sections should be written in the same answer book.

**SECTION – A**

**(Inorganic, Organic and Physical)**

1. Answer **any ten** of the following : (10×2=20)
- What are the objectives of electroplating ?
  - What is Glass ?
  - Name the important ores of Thorium with its composition.
  - What is Cement ?
  - What is Co-precipitation ?
  - How aniline is prepared from nitrobenzene ?
  - What is diazo coupling reaction ?
  - How amino acids synthesised by malonic ester ?
  - What is denaturation of proteins ?
  - What is turnover number ?
  - Define abnormal molecular mass.
  - What are isotonic solution ?
  - Why vapour pressure of solvent is higher than the vapour pressure of solution ?
  - Define standard electrode potential.
  - How emf is developed in electrode concentration cells without transference ?

**SECTION – B**

**(Inorganic)**

2. Answer **any two** of the following : (2×4=8)
- Describe the electroplating of Nickel.
  - Describe the types of glass, their composition and uses.
  - Explain the various Chemical steps involved in the gravimetric analysis.

P.T.O.



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3. Answer **any two** of the following :

- How cement is manufactured by dry process ?
- Explain the extraction of Thorium from monazite sand.
- Discuss the condition of precipitation.

(2x6=12)

SECTION - C

(Organic)

4. Answer **any two** of the following :

- Explain the structural features affecting the basicity of amines.
- What is Zwitter ion ? Explain isoelectric point.
- What are the characteristic features of enzymes ?

(2x4=8)

5. Answer **any two** of the following :

- Write any three synthetic application of aryl diazonium salt.
- How peptide is synthesised from carbobenzoxy method ?
- What are enzymes ? Give the mechanism of enzyme action.

(2x6=12)

SECTION - D

(Physical)

Answer **any two** of the following :

- How would you make use of Hydrogen electrode in determining pH of given solution ?
- Derive the relation between relative lowering of Vapour pressure and molecular mass of the non-volatile solute.
- A solution containing 2.44 gm of solute dissolved in 75 g of water boiled at  $100.413^{\circ}\text{C}$ . Calculate the molar mass of solute [ $K_b$  for water =  $0.52 \text{ kg mol}^{-1}$ ]

(2x4=8)

Answer **any two** of the following :

- Explain the method to determine lowering of vapour pressure by Ostwald-Walker method.
- Discuss the potentiometric redox titration.
- Deduce an expression for the EMF of concentration cell without transference.

(2x6=12)



14MY 44 – VI (43)

B.Sc. VI Semester Degree Examination, May 2014

Paper – 6.1 : CHEMISTRY

3 Hours

Max. Marks : 80

- Instructions :** 1) Question paper has **four** Sections. **All** Sections are **compulsory**.  
2) Answers for **all** Sections should be written in the **same** answer book.

SECTION – A

(Inorganic, Organic and Physical)

(10×2=20)

Answer **any ten** of the following :

- What are the raw materials required for the manufacture of cement ?
- Mention two important applications of electroplating.
- How is thorium obtained from thorium chloride ?
- Write the systematic name and composition of carnotite and autunite.
- Mention various types of glasses.
- What is azo coupling ?
- How do aryl amines react with aldehydes ?
- What is Heller's ring test ?
- Write the synthesis of amino acids by Strecker synthesis.
- What are cofactors ?
- Define Van't-Hoff factor.
- What are colligative properties ?
- State the laws of Osmotic pressure.
- Define EMF.
- What are the merits and demerits of glass electrode ?

P.T.O.





## SECTION – B

## (Inorganic)

2. Answer **any two** of the following :

(2×4=8)

- Explain the electroplating of gold.
- How is glass manufactured ?
- Discuss the conditions of precipitation.

3. Answer **any two** of the following :

(2×6=12)

- Describe the extraction of uranium from pitch blende.
- What are the principles of electroplating ?
  - Write the composition and uses of any two types of glasses.
- Write a note on :
  - Filtration
  - Washing and
  - Drying.

## SECTION – C

## (Organic)

4. Answer **any two** of the following :

(2×4=8)

- How are amines distinguished by nitrous acid test ?
- Write the classification of proteins based on structure.
- Write about
  - Michaelis-Menten equation and its importance.
  - Turnover number.

5. Answer **any two** of the following :

(2×6=12)

- Write the classification of amines with examples and explain the stereochemistry of amino nitrogen.
- How is the peptide structure determined ?
- What are the characteristic features of enzymes ?



## SECTION - D

(Physical)

(2×4=8)

6. Answer **any two** of the following :

- Write a note on Weston cadmium cell.
- Deduce the relation between depression in freezing point and lowering of vapour pressure.
- What is reverse osmosis ? Calculate the osmotic pressure of a 5 % solution of glucose (Mol. wt = 180) at 18°C.

(2×6=12)

7. Answer **any two** of the following :

- How to determine molar mass of a solute by ebullioscopic method ?
- Discuss the Potentiometric Redox titrations.
- Deduce an expression for EMF of electrolyte-concentration cells with transference.



April/May - 2013.

13MY 44 - VI (43)

B.Sc. VI Semester Degree Examination, May 2013  
VII Paper - 6.1 : CHEMISTRY

Time : 3 Hours

Max. Marks : 80

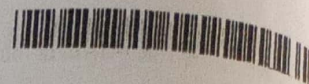
- Instructions :**
- 1) Question paper has **four** Sections. **All** Sections are **compulsory**.
  - 2) Answers for **all** Sections should be written in the **same** answer book.

SECTION - A  
(Inorganic, Organic, Physical)

1. Answer **any ten** of the following : (10x2=20)
- a) Give the chief minerals of Thorium.
  - b) Explain the role of Gypsum in Cement.
  - c) What is glass ? Give its composition.
  - d) What is electroplating ?
  - e) What is meant by 24-Carat gold ?**
  - f) Define denaturation of proteins.
  - g) What are enzymes ?
  - h) What is peptide linkage ? How is it formed ?
  - i) What are Zwitter ions ? Give example.
  - j) Give one method of synthesis of amino acid.
  - k) What is meant by liquid junction potential ?
  - l) What are isotonic solutions ?
  - m) What is Ebullioscopic constant ?
  - n) Define osmotic pressure.
  - o) Write the symbolic representation of SHE and also its reduction reaction.

P.T.O.





SECTION – B  
(Inorganic)

2. Answer **any two** of the following :

(2x

- a) How is gold extracted by hydrometallurgy ?
- b) Explain the electroplating of Chromium.
- c) Write the mechanism of setting and hardening of cement.

3. Answer **any two** of the following :

(2x6=

- a) How is cement manufactured by dry process ?
- b) Mention any four type of glass its composition and uses.
- c) How is nickel extracted from sulphide ore ?

SECTION – C  
(Organic)

4. Answer **any two** of the following :

(2x4=8

- a) Explain the separation of amines by Heinsberg method.
- b) Explain the structural features affecting basicity of amines.
- c) What are active sites ? Explain the mechanism of enzyme action.

5. Answer **any two** of the following :

(2x6=12)

- a) How is benzene diazonium chloride prepared ? Give two synthetic application of it.
- b) Explain the primary and secondary structure of proteins.
- c) How is peptide synthesised from carbobenzoxy method ?





SECTION – D  
(Physical)

6. Answer **any two** of the following : (2×4=8)
- Describe Berkley and Heartley's method of measuring osmotic pressure.
  - Write a note on calomel electrode.
  - 0.440 g of a substance dissolved in 22.2g of benzene lowered the freezing point of benzene by  $0.567^\circ$ . Calculate the molecular weight of the substance. ( $K_f = 5.12^\circ\text{C mole}^{-1}$ ).
7. Answer **any two** of the following : (2×6=12)
- How would you make use of hydrogen electrode in determining pH of a given solution ?
  - Define Raoult's law and derive the relationship between lowering of vapour pressure and molecular weight of the dissolved solute.
  - Deduce the relation between molecular weight and depression in freezing point.
-



May

6.1 2012

12MY 44 – VI (43)

B.Sc. VI Semester Degree Examination, May 2012  
CHEMISTRY : Paper – VII (6.1)

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) Question paper has **four** Sections. **All** Sections are **compulsory**.  
2) Answer for **all** Sections should be written in the **same** answer book.

SECTION – A

(Inorganic, Organic and Physical)

1. Answer **any ten** of the following : (10×2=20)
- Name the important minerals of thorium with its composition.
  - What are the different types of precipitates ?
  - What is cement ?
  - What are the objectives of electroplating ?
  - What is co-precipitation ?
  - Write the oxidation reaction of aryl amines.
  - What is diazocoupling reaction ?
  - How amino acids synthesised by malonic ester synthesis ?
  - What are peptides ?
  - Write Michaelis-Menten equation and its importance.
  - What are Isotonic solutions ?
  - Why boiling point of solution is higher than boiling point of solvent ?
  - What is the purpose of using salt bridge in chemical cells ?
  - How emf is developed in electrode concentration cells without transference. ?
  - What kind of electrodes are called as Redox electrodes ?



SECTION – B  
(Inorganic)

2. Answer **any two** of the following :
- Write a note on post-precipitation.
  - Explain the electroplating of chromium.
  - Give the composition and application of any four types of glasses.
3. Answer **any two** of the following :
- Explain the extraction of Thorium from its ore.
  - How is cement manufactured by dry process ?
  - Explain how the following factors affect the solubility of precipitates.
    - Temperature
    - Complex formation and
    - pH of the solution.

SECTION – C  
(Organic)

4. Answer **any two** of the following :
- Explain the stereochemistry of amine nitrogen.
  - How are proteins classified according to composition ?
  - Give a general picture of the mechanism of enzyme action.
5. Answer **any two** of the following :
- Write any three synthetic applications of aryl diazonium salts.
  - Explain primary and secondary structures of proteins.
  - Write a note on :
    - Non-competitive inhibition.
    - Co-factors.





SECTION - D

(Physical)

6. Answer **any two** of the following : (2×4=8)
- a) How would you make use of Hydrogen electrode in determining pH of given solution ?
  - b) Deduce the relation between molecular weight and depression in freezing point.
  - c) Write a note on calomel electrode.

7. Answer **any two** of the following : (2×6=12)
- a) Discuss potentiometric acid-base titrations in detail.
  - b) Deduce the relation between molecular weight and elevation in boiling point by using Clausius Clayperon equation.
  - c) i) Write a note on liquid junction potential. 3  
ii) What is Vant Hoff's factor ? 3





April / May - 2011

11MY 44 - VI (43)

B.Sc. VI Semester Degree Examination, May 2011  
CHEMISTRY (Paper - VII (6.1))

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) Question paper has four Sections. All Sections are compulsory.  
2) Answer for **all** Sections should be written in the same answer book.

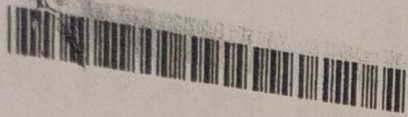
SECTION - A

(Inorganic, Organic and Physical)

1. Answer **any ten** of the following : (10×2=20)
- Mention the composition of :
    - Thorite and
    - Thorianite.
  - What is a glass ? Write the general formula of the ordinary glass.
  - Describe the following :
    - Shaping and
    - Finishing of a glass.
  - Explain simultaneous precipitation.
  - Define a Cullet. What is its function in the glass industry ?
  - How aniline is prepared from nitrobenzene ?
  - How amino acids are classified ? Give example.
  - What are Zwitter ions ? Give examples.
  - What is the difference between peptides and proteins ?
  - What is turnover number of enzymes ?

P.T.O.





April / May - 2011

11MY 44 - VI (4)

B.Sc. VI Semester Degree Examination, May 2011  
CHEMISTRY (Paper - VII (6.1))

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) Question paper has four Sections. All Sections are compulsory.  
2) Answer for all Sections should be written in the same answer book.

SECTION - A  
(Inorganic, Organic and Physical)

1. Answer any ten of the following : (10×2=20)
- Mention the composition of :
    - Thorite and
    - Thorianite.
  - What is a glass ? Write the general formula of the ordinary glass.
  - Describe the following :
    - Shaping and
    - Finishing of a glass.
  - Explain simultaneous precipitation.
  - Define a Cullet. What is its function in the glass industry ?
  - How aniline is prepared from nitrobenzene ?
  - How amino acids are classified ? Give example.
  - What are Zwitter ions ? Give examples.
  - What is the difference between peptides and proteins ?
  - What is turnover number of enzymes ?

P.T.O.





- k) State relative lowering of vapour pressure.
- l) What is meant by semipermeable membrane? Give example.
- m) Define Vant-Hoff factor.
- n) Define standard electrode potential.
- o) What is meant by liquid junction potential?

**SECTION - B**  
**(Inorganic)**

2. Answer **any two** of the following :

(2×4=8)

- a) Describe the electroplating of Nickel.
- b) Explain the various chemical steps involved in the gravimetric analysis.
- c) What is portland cement? Mention its composition.

3. Answer **any two** of the following :

(2×6=12)

- a) Describe the extraction of Uranium from pitchblende.
- b) Explain the various types of glasses.
- c) Explain the desirable properties of precipitates.

**SECTION - C**  
**(Organic)**

4. Answer **any two** of the following :

(2×4=8)

- a) How is benzene diazonium chloride prepared? Give one synthetic application of it.
- b) Give the synthesis of Amino acids by Phthalimide.
- c) How peptide is synthesised from carbobenzoxy method?

5. Answer **any two** of the following :

(2×6=12)

- a) Explain structural features affecting basicity of amines.
- b) Explain isoelectric point with reference to amino acids.
- c) What are the characteristic features of enzymes?



April/May - 2010.



Paper - 6.1 (VII) 10MY 44 - VI (43)

**B.Sc. VI Semester Degree Examination  
CHEMISTRY (Paper - VII)**

Time: 3 Hours

Max. Marks : 80

- Instructions :** 1) Question paper has four Sections. All Sections are compulsory.  
2) Answers for all Sections should be written in the same answer book.

**SECTION - A  
(Inorganic, Organic and Physical)**

1. Answer any ten of the following : (10×2=20)
- Why gypsum is mixed with cement ?
  - What are the steps involved in gravimetric analysis ?
  - How annealing of glass takes place ?
  - Mention two important applications of electroplating.
  - What is co-precipitation ?
  - How amines are classified ? Give examples.
  - How do you convert nitrobenzene to aniline ?
  - Why aniline is weaker base than methyl amine ?
  - What are zwitter ions ? Give example.
  - What is turnover number of enzymes ?
  - Define cryoscopic constant.
  - State Raoult's law of vapour pressure.
  - What are isotonic solutions ?
  - Give the Nernst equation for electrode potential.
  - Give one example for
    - Redox electrode
    - Amalgam electrode.

P.T.O.





SECTION - B  
(Inorganic)

2. Answer any two of the following :

(2×4=8)

- Write a note on electroplating.
- Discuss the raw materials of glass.
- Explain the conditions of precipitation.

3. Answer any two of the following :

(2×6=12)

- How does thorium occur in nature ? Explain the extraction of thorium from monozite sand.
- Write a note on the following :
  - Filtration
  - Dilution
  - Ignition.
- Explain the manufacture of cement.

SECTION - C  
(Organic)

4. Answer any two of the following :

(2×4=8)

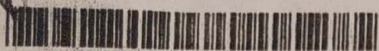
- Give any two reactions of amines.
- Give classification of amino acids with examples.
- Write a note on denaturation of proteins.

5. Answer any two of the following :

(2×6=12)

- Describe Hinsburg method for separation of amine mixtures.
- Explain factors affecting the rate of enzymatic reactions.
- Explain isoelectric point of amino acids.





SECTION – D  
(Physical)

6. Answer any two of the following : (2×4=8)
- a) What is Vant-Hoff factor ? Deduce its relationship with degree of dissociation of salt.
  - b) Write a note on liquid junction potential.
  - c) Describe working of calomel electrode.
7. Answer any two of the following : (2×6=12)
- a) Describe Landsberger's method of determination of molar mass of a solute.
  - b) What is meant by emf of a cell ? Describe potentiometric method of its determination.
  - c) Define osmotic pressure. Describe Berkley and Hartley's method of its determination.
-



**B.Sc. VI Semester Degree Examination, April/May - 2019****CHEMISTRY****Paper - 6.2**

Time : 3 Hours

Maximum Marks : 80

**Instructions to Candidates:**

- 1) Question paper has four sections. All sections are compulsory
- 2) Answer for all sections should be written in the same answer book

**Section-A****(Analytical, Industrial, Organic and Environmental)**

1. Answer any Ten of the following : (10×2=20)
- a) Write any four important safety measures to be taken in the chemistry laboratory.
  - b) What is meant by buoyancy error?
  - c) What is meant by digestion of precipitate?
  - d) Define the term accuracy.
  - e) Name the chemical substance used in desiccator.
  - f) Define Iodine value.
  - g) Write the structure of Alizarin.
  - h) What are antibiotics? Give example.
  - i) Write the Claisen condensation reaction.
  - j) What are enolates? Give example.
  - k) Define soil pollution.
  - l) What are the parameters used in the analysis of water sample?
  - m) What is BOD?
  - n) Write the analysis of moisture present in soil.
  - o) Define hardness of water.

[P.T.O]





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**Section-B**

**(Analytical)**

2. Answer any **Two** of the following : (2×4=8)
- a) Explain the decomposition of samples with Inorganic acids in open vessels
  - b) Mention the factors affecting the choice and selection of the analytical method
  - c) Write any four uses of statistics.
3. Answer any **Two** of the following : (2×6=12)
- a) What are the needs for cleanliness and neatness of an analytical laboratory?
  - b) Explain the calibration of burette and volumetric flask.
  - c) Explain the different types of Intermediate errors.

**Section-C**

**(Industrial Organic)**

4. Answer any **Two** of the following : (2×4=8)
- a) How p-dodecylbenzene sulphonate manufactured?
  - b) Give the synthesis of methyl orange. Give its uses.
  - c) Give the synthesis of urea formaldehyde resins.
5. Answer any **Two** of the following : (2×6=12)
- a) Define saponification value. How do you determine saponification value and give its importance in the analysis of oils and fats?
  - b) Give the synthesis of the following
    - i) Congo red
    - ii) Sulphanilamide.
  - c) Write a note on alkylation and acylation of enamines with examples.

**Section-D**

**(Environmental)**

6. Answer any **Two** of the following : (2×4=8)
- a) Describe the method for the estimation of alkali metals in soil analysis.
  - b) What are the objectives of water analysis?
  - c) Discuss about the reuse and degradation of plastics.



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7. Answer any **Two** of the following :

(2×6=12)

- a) What are Industrial effluents? Explain their effects on environment.
  - b) Explain the estimation of following parameters in water sample.
    - i) Fluoride
    - ii) Turbidity
    - iii) Phosphate.
  - c) Explain the measurement of BOD and COD in water.
-



B.Sc. VI Semester Degree Examination, May - 2018

**CHEMISTRY**

**Paper - 6.2**

Time : 3 Hours

Maximum Marks : 80

**Instructions to Candidates:**

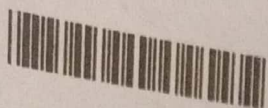
- 1) Question paper has **Four** sections. All sections are **compulsory**.
- 2) Answer for **All** sections should be written in the same answer book.

**SECTION - A**

**(Inorganic, Industrial Organic and Environmental)**

1. Answer any **Ten** of following: (10×2=20)
- a) Write any two uses of Statistics.
  - b) Differentiate between the classical and instrumental method.
  - c) What is meant by Buoyancy error?
  - d) Define the term replicates.
  - e) Define the term accuracy and precision.
  - f) What are waxes? Give example.
  - g) Explain Keto - end tautomerism with an example.
  - h) What are antibiotics? Give example.
  - i) What are Vat dyes? Give example.
  - j) Give the uses of phenol - formaldehyde resins.
  - k) Define Biological oxygen demand.
  - l) Give the significance of Cadmium in water pollution.
  - m) Explain the principle for the estimation of lime in soil.





(2)

- n) What is meant by polymer degradation?
- o) Describe the method for the estimation of sulphate parameter in water sample gravimetric method.

**Section - B**

**(Inorganic)**

2. Answer any **Two** of the following : (2×4=)

- a) Explain the calibration of burette.
- b) Write the rules for determining the significant figures.
- c) The normality of a solution is determined by four separate titrations. The result being 0.4041, 0.4049, 0.4039 and 0.4043. Calculate mean, median, range, standard deviation and relative standard deviation.

3. Answer any **Two** of the following : (2×6=12)

- a) Give an account of Gravimetric techniques.
- b) Discuss about safety in the analytical laboratory.
- c) Explain the different types of determinate errors.

**Section - C**

**(Industrial Organic)**

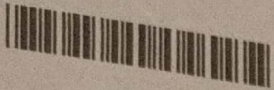
4. Answer any **Two** of the following : (2×4=8)

- a) Define Acid value. How do you determine the Acid value? Give its importance in the analysis of oils and fats.
- b) Explain Acylation of enamines.
- c) Give the synthesis and uses of
- i) Chloramine - T
  - ii) Sulphanilamide

5. Answer any **Two** of the following : (2×6=12)

- a) Explain the manufacture of soap by modern continuous process.
- b) What are condensation polymers? Give the synthesis and uses of polyamides with an example.





- (3)
- c) Write the synthesis and chemistry of
- i) Crystal violet
  - ii) Fluorescien.

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**Section - D**  
**(Environmental)**

6. Answer any **Two** of the following :

- a) Explain the method for the estimation of silica in soil.
- b) What are the source of water pollution?
- c) Describe the method for the estimation of chloride in water sample.

(2×4=8)

7. Answer any **Two** of the following :

- a) Describe how C.O.D. is determined in water sample.
- b) What are industrial effluents? What is their effect on environment?
- c) Write a note on plastic recycling.

(2×6=12)



B.Sc. VI Semester Degree Examination, May/June 2017  
Paper – 6.2 : CHEMISTRY

Time : 3 Hours

Max. Marks : 80

- Instructions :**
- 1) Question paper has **four** Sections. **All** Sections are **compulsory**.
  - 2) Answer for **all** Sections should be written in the **same** answer book.

SECTION – A  
(Analytical, Industrial Organic and Environmental)

- I. Answer **any ten** of the following : (10×2=20)
- a) Write any four important safety measures to be taken in the Chemistry laboratory.
  - b) Mention any two difference between the classical and instrumental methods.
  - c) Name the chemical substance used in desiccator.
  - d) Define the term mean with example.
  - e) Define co-efficient of variation with example.
  - f) Define iodine value with example.
  - g) Write the structure of Indigo.
  - h) What are antibiotics ? Give one example.
  - i) Define ionic Vinyl polymerisation.
  - j) What are acidic  $\alpha$  - hydrogen ? Give example.
  - k) What is sampling ?

P.T.O.



- l) What is water pollution ?
- m) Define alkalinity of water sample.
- n) Write the analysis of sulphur present in soil.
- o) How would you classify wastes ? Mention a list of typical toxic wastes.

**SECTION - B**  
**(Analytical)**

2. Answer **any two** of the following :

(2x4=8)

a) Explain the cleaning of glasswares.

b) Write a note on :

i) Filtration

ii) Drying.

c) What is precision ? Explain the different terms used to describe the precision of a set of data.

3. Answer **any two** of the following :

(2x6=12)

a) Describe the principle and technology of the electronic balance.

b) What is an error ? Give their different types of errors.

c) Explain the methods of reporting analytical data.

**SECTION - C**  
**(Industrial Organic)**

4. Answer **any two** of the following :

(2x4=8)

a) Write a note on acid value.

b) Give the synthesis of methyl orange.

c) Explain Ziegler-Natta-polymerisation.



5. Answer **any two** of the following :

- a) Give the synthesis of sodium P-didecylbenzene sulphonate.
- b) Write a note on natural and synthetic rubbers.
- c) What are enamines ? Explain the acylation of enamines.

(2×6=12)

SECTION – D  
(Environmental)

6. Answer **any two** of the following :

- a) Discuss about reuse and degradation of plastics.
- b) Describe the method for the estimation of the following parameters in water sample.
  - i) Mercury
  - ii) Arsenic
- c) Write a note on water pollution in radioactive wastes.

(2×4=8)

7. Answer **any two** of the following :

- a) Write the significance of zinc, copper and manganese in water.
- b) Explain the water pollution and standards.
- c) Explain the analysis of phosphorus, silica and total nitrogen of soil.

(2×6=12)



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B.Sc. VI Semester Degree Examination, May/June 2016  
Paper No. – 6.2 : CHEMISTRY

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) Question paper has **four** Sections. **All** Sections are **compulsory**.  
2) Answer for **all** Sections should be written in the **same** answer books.

SECTION – A

(Inorganic, Industrial Organic and Environmental)

1. Answer **any ten** of the following : (10×2 = 20)
- a) What is the role of analytical Chemistry ?
  - b) Explain the techniques of weighing while using the analytical balance.
  - c) Define the term median with an example.
  - d) Define ppt and ppm.
  - e) What is absolute error and relative error ?
  - f) Define acid value with example.
  - g) Write the structure of Alizarin.
  - h) What are antimalarials ? Give example.
  - i) What is condensation polymerisation ? Give example.
  - j) What are enolates ? Give example.
  - k) What is pollutant ?
  - l) What are the parameters used in the analysis of soil pollution ?

P.T.O.



- m) Define soil pollution.
- n) Write a method for the estimation of phosphorous in soil.
- o) What is polymer degradation ?

## SECTION - B

## (Inorganic)

2. Answer **any two** of the following :

(2x4)

- a) Discuss the role of analytical Chemistry.
- b) Give the classification of quantitative chemical analytical methods.
- c) Explain the calibration operation of pipette.

3. Answer **any two** of the following :

(2x6 = 12)

- a) Explain the cleanliness and neatness in analytical laboratory.
- b) Give an account of 'Gravimetric techniques'.
- c) Explain the different types of determinate errors.

## SECTION - C

## (Industrial Organic)

4. Answer **any two** of the following :

(2x4 = 8)

- a) Write a note on saponification value.
- b) How malachite green is prepared ?
- c) Explain the synthesis of polyurathane with example and give its uses.

5. Answer **any two** of the following :

(2x6 = 12)

- a) What is soap ? How it is manufactured by modern continuous process ?
- b) Give the synthesis of phenol-formaldehyde resins and its uses.
- c) How ethyl acetoacetate is synthesised ? Explain keto-enol tautomerism of ethyl acetoacetate.



May - 2015

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June 2015



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SECTION - D  
(Environmental)

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6. Answer **any two** of the following :

(2×4 = 8)

- a) Explain the impact of water pollutants on environment.
- b) Explain the analysis of alkali metals in soil.
- c) Discuss the different ways to carry out recycling of plastics.

7. Answer **any two** of the following :

(2×6 = 12)

- a) Write a note on industrial effluents and their treatment methods.
  - b) Describe the method for the estimation of
    - i) fluoride and
    - ii) phosphate in water analysis.
  - c) Explain the measurement of DO, BOD and COD in water.
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May - 2015



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B.Sc. VI Semester Degree Examination, May/June 2015  
Paper – 6.2 : CHEMISTRY

Time : 3 Hours

Max Marks : 80

- Instructions :** 1) Question paper has **four** Sections. **All** Sections are **compulsory**.  
2) Answer for **all** Sections should be written in the **same** answer book.

SECTION – A

(Analytical, Industrial Organic and Environmental)

1. Answer **any ten** of the following : (10×2=20)
- What is Analytical chemistry ?
  - What is meant by digestion of precipitate ?
  - What is an analytical balance ?
  - Define the term accuracy and precision.
  - What are oils and fats and how they differ from each other ?
  - Define a dye.
  - What are antimalarials ? Give example.
  - What is mean and median ?
  - What are polyesters ? Give example.
  - What are enolates ? Give example.
  - Define water pollution.
  - Describe the method for the estimation of sulphate parameter in water sample.
  - Explain the method for the estimation of phosphorous in soil.
  - How would you classify waste ? Mention a list of typical toxic waste.
  - What is biological degradation ?

P.T.O.





SECTION - B  
(Analytical)

2. Answer any two of the following :

(2x4)

- Describe in brief about sample decomposition.
- What are the needs for cleanliness and neatness of an analytical laboratory ?
- Write any four uses of statistics.

3. Answer any two of the following :

(2x6=12)

- Explain the factors affecting the selection of an analytical method.
- Explain the calibration of pipette and volumetric flask.
- What are determinate and indeterminate errors ? Explain the different types of determinate errors.

SECTION - C  
(Industrial Organic)

4. Answer any two of the following :

(2x4=8)

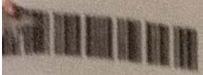
- Explain the cleansing action of soap.
- Write a note on vat dyes.
- Give the synthesis of urea-formaldehyde resin.

5. Answer any two of the following :

(2x6=12)

- How are dyes classified on the basis of structure ? Give examples.
- Write a note on natural and synthetic rubber.
- Give the synthesis of and uses of :
  - Sulphanilamide
  - Chloramine - T.





SECTION - D  
(Environmental)

6. Answer **any two** of the following : (2x4=8)
- a) Discuss about reuse and degradation of plastics.
  - b) Describe the method for the estimation of silica in soil analysis.
  - c) Write a note on heavy metal pollution and public health.
7. Answer **any two** of the following : (2x6=12)
- a) Explain the estimation of following parameter in water sample.
    - i) Chloride
    - ii) Hardness
    - iii) Turbidity.
  - b) Explain how D.O. and B.O.D. is measured in water sample.
  - c) What are industrial effluents ? Explain their effects on environment.

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14MY 44 – VI (44)

B.Sc. VI Semester Degree Examination, May 2014  
CHEMISTRY (Paper – 6.2)

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) Question Paper has **four** Sections. **All** Sections are **compulsory**.  
2) Answers for **all** Sections should be written in the **same** answer book.

SECTION – A  
(Inorganic, Organic and Physical)

1. Answer **any ten** of the following : (10×2=20)
- Write any four important safety measures to be taken in the chemistry laboratory.
  - How temperature becomes a source of error in weighing ?
  - What are the four important precautions to be taken in using an analytical balance ?
  - How constant errors effect the result of analysis ?
  - What is the difference between precision and accuracy ?
  - Give the composition of oil and wax.
  - How is crystal violet prepared ?
  - What is chemotherapy ?
    - Write the Claisen condensation reaction.
    - What are polyesters ? Give an example.
  - Write any four objectives of analysis of water pollution.
    - What is DO ?
  - List out any four disorders in mammals due to heavy metal pollution.
  - Write the analysis of moisture present in soil.
  - What is polymer degradation ?

P.T.O.



**SECTION – B**  
**(Inorganic)**

2. Answer **any two** of the following :

- Discuss the role of analytical chemistry.
- Give the classification of quantitative chemical analytical methods.
- How are determinate errors corrected ?

3. Answer **any two** of the following :

- Give an account of "Gravimetric techniques".
- Describe the calibration of graduated flask and pipette.
- Explain the methods of reporting analytical data.

**SECTION – C****(Organic)**

4. Answer **any two** of the following :

(2x)

- Discuss the merits and demerits of syndets over soaps.
- Write a note on chromophore theory of colour and constitution.
- Explain Ziegler-Natta polymerisation.

5. Answer **any two** of the following :

(2x6=12)

- Discuss the analysis of oils and fats.
- Give the synthesis and uses of :
  - Sulpha thiazole
  - Chloroquin and
  - Sulphanilamide.
- What are epoxy resins ? Give any two uses.
  - Write a note on acidity of  $\alpha$ -hydrogens.



SECTION – D  
(Environmental)

Answer **any two** of the following :

(2×4=8)

- a) What is the effect of industrial effluents on environment ?
- b) Explain the measurement of pesticides present in a water sample.
- c) Write a note on source of water pollution.

7. Answer **any two** of the following :

(2×6=12)

- a) Discuss the impact of water pollutants on environment.
  - b) Write the significance of zinc, copper and manganese in water.
  - c) Explain the analysis of pH, total nitrogen and lime of soil.
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7 May - 2013



13MY 44 – VI (44)

B.Sc. VI Semester Degree Examination, May 2013  
CHEMISTRY (Paper – 6.2)

Time : 3 Hours

Max. Marks : 80

**Instructions :** 1) Question paper has **four** Sections. **All** Sections are **compulsory**.

2) Answer for **all** Sections should be written in the **same** answer book.

SECTION – A

(Analytical, Industrial Organic and Environmental)

1. Answer **any ten** of the following :

(10×2=20)

- a) What is the role of analytical chemistry ?
- b) Define ppt and ppm.
- c) What is the unit of electrical conductivity ?
- d) Define the term accuracy.
- e) What is sampling ?
- f) Define iodine value.
- g) Write the structure of congo red.
- h) What are antibiotics ? Give one example.
- i) What is condensation polymerisation ?
- j) Define enamines. Give example.
- k) What is pollutant ?
- l) Define acidity of water sample.
- m) Mention water pollution laws.
- n) Define biological degradation.
- o) Give a method for the estimation of phosphorous in soil.

P.T.O.





SECTION – B  
(Analytical)

2. Answer **any two** of the following :
- Explain the calibration operation of burette.
  - Discuss about safety in the analytical laboratory.
  - What is precision ? Explain the different terms used to describe the precision of a set of replicate data.
3. Answer **any two** of the following : (2x6)
- Describe the principle and technology of the electronic balance.
  - Write a note on cleanliness and neatness in analytical laboratory.
  - What is an error ? Give their different types of errors.

SECTION – C  
(Industrial Organic)

4. Answer **any two** of the following : (2x4=8)
- What is saponification value ? How it is determined ?
  - Define dyes. Discuss the classification of dyes based on composition.
  - Give the synthesis of urea-formaldehyde resins.
5. Answer **any two** of the following : (2x6=12)
- What is soap ? How it is manufactured by modern continuous process ?
  - Give the synthesis of :
    - Malachite green
    - Chloramine – T
  - How ethylacetoacetate is synthesised ? Explain Keto-enol tautomerism of ethylacetoacetate.





SECTION – D  
(Environmental)

6. Answer **any two** of the following : (2×4=8)
- a) What is COD ? How it is measured ?
  - b) Explain the analysis of alkali metals in soil.
  - c) Discuss about reuse and degradation of plastics.
7. Answer **any two** of the following : (2×6=12)
- a) Write a note on industrial effluents and their treatment methods.
  - b) Explain the estimation of following parameters in water sample.
    - i) Chloride
    - ii) Hardness.
  - c) Explain :
    - i) Heavy metal pollution
    - ii) D.O.
    - iii) B.O.D.
-



**B.Sc. VI Semester Degree Examination, May 2012**  
**Paper – VIII (6.2) : CHEMISTRY**

Time: 3 Hours

Max. Marks: 80

- Instructions :** 1) Question paper has **four** Sections. **All** Sections are **compulsory**.  
 2) Answer for **all** Sections should be written in the **same** answer book.

**SECTION – A**  
**(Inorganic, Organic and Physical)**

1. Answer **any ten** of the following : (10×2=20)
- Define Analytical chemistry.
  - What is meant by Buoyancy error ?
  - Name the chemical substance used in desiccator.
  - Define the term median with an example.
  - What is absolute error and relative error ?
  - What are mordant dyes ? Give example.
  - Write the structure of Congo red.
  - What are antimalarials ? Give examples.
  - Define saponification value.
  - What is keto-enol tautomerism ? Give one example.
  - Define Biological degradation.
  - What are the parameters used in the analysis of water sample ?
  - How pH of soil is determined ?
  - What is plastic degradation ?
  - What is water pollution ?

**SECTION – B**  
**(Inorganic)**

2. Answer **any two** of the following : (2×4=8)
- Explain about the calibration of Burette.
  - What is precision ? Explain the different terms used to describe the precision of a set of data.
  - Write a note on cleanliness and neatness in analytical laboratory.

P.T.O.



3. Answer **any two** of the following :

a) Discuss about safety in the analytical laboratory.

b) Explain the different types of determinate errors.

c) Discuss in brief about the different steps involved in the Gravimetric estimation.

SECTION – C  
(Organic)

4. Answer **any two** of the following :

a) How is P-dodecyl benzene sulphonate manufactured ?

b) Give the synthesis of :

i) Fluorescein

ii) Antipyrine

c) Write a note on :

i) Sulpha drugs and

ii) Antibiotics.

5. Answer **any two** of the following :

a) Explain the classification of dyes based on their composition. Give examples. (2x6=12)

b) How ethyl acetoacetate is prepared ? Explain the mechanism of the reaction.

c) Explain the synthesis of polyurethanes with example and give its uses.

SECTION – D  
(Environmental)

6. Answer **any two** of the following :

a) Describe the method for the estimation of silica in soil analysis. (2x4=8)

b) What are the objectives of water analysis ?

c) Write a note on heavy metal pollution and public health.

7. Answer **any two** of the following :

a) What are industrial effluents ? What is their effect on environment ? (2x6=12)

b) Describe the method for the estimation of

i) Fluoride and

ii) Phosphate in water analysis.

c) Write a note on plastic recycling.



April / May - 2011

11MY 44 - VI (44)

B.Sc. VI Semester Degree Examination, May 2011  
Paper - VIII (6.2) : CHEMISTRY

Time : 3 Hours

Max. Marks : 80

- Instructions :* 1) Question paper has four Sections. All Sections are compulsory.  
2) Answer for all Sections should be written in the same answer book.

SECTION - A  
(Analytical, Industrial Organic and Environmental)

(10×2=20)

1. Answer any ten of the following :
  - a) Define macro and micro analysis.
  - b) Mention any two differences between the classical and instrumental methods.
  - c) Explain the errors in weighing of sample in analytical balance.
  - d) Define the term mean and median.
  - e) Write a note on desiccator.
  - f) Define acid value.
  - g) Write the structure of Alizarin.
  - h) What are antimalarials ? Give one example.
  - i) What is condensation polymerisation ? Give example.
  - j) What are enolates ? Give example.
  - k) Define water pollution.
  - l) Describe the method for the estimation of sulphate parameter in water sample.
  - m) Explain the method for the estimation of phosphorous in soil.
  - n) How would you classify wastes ? Mention a list of typical toxic wastes.
  - o) Explain pH in analysis of soil.

P.T.O.





SECTION – B  
(Analytical)

2. Answer **any two** of the following :
- Mention the factors affecting the choice and selection of the analytical method. (2x4)
  - Write a note on solution of the sample.
  - Explain about the calibration of a pipette.
3. Answer **any two** of the following :
- Describe the principle and technology of the electronic balance. (2x6=12)
  - Explain the terms :
    - Filtration and
    - Percentage of a solute.
  - Explain the different types of determinate errors.

SECTION – C  
(Industrial Organic)

4. Answer **any two** of the following : (2x4=8)
- Write a note on Iodine number.
  - How Indigo is synthesised ?
  - Discuss the mechanism of Claisen condensation.
5. Answer **any two** of the following : (2x6=12)
- Describe the manufacture of soaps by modern continuous method.
  - Give the synthesis of the following :
    - Congo red and
    - Sulphanilamide
  - Give the synthesis of phenol-formaldehyde resins.
    - Write a note on alkylation of diethyl malonate and ethyl acetoacetate.





SECTION - D  
(Environmental)

6. Answer **any two** of the following :

(2×4=8)

- a) Write a note on BOD and DO level in H<sub>2</sub>O.
- b) Describe the method for the estimation of the following parameters in water sample :
  - i) Mercury and
  - ii) Lead
- c) Explain list of different ways to carry out recycling of plastics.

7. Answer **any two** of the following :

(2×6=12)

- a) What are aerobic and anaerobic treatment process ? Explain any one treatment.
  - b) Explain speciation scheme with reference to heavy metals in natural water.
  - c) Explain the estimation of following parameters in water sample :
    - i) Total dissolved salts and
    - ii) Different forms of nitrogen.
-



April / May - 2010.

Paper - 6.2 (VIII) 10MY 44 - VI (44)

B.Sc. VI - Semester Degree Examination  
Paper VIII : CHEMISTRY

Time : 3 Hours

Max. Marks : 80

**Instructions :** 1) Question paper has four Sections.

2) All Sections are compulsory.

3) Answers for all Sections should be written in the same answer book.

SECTION - A

(Analytical, Industrial Organic and Environmental)

Answer any ten of the following :

(10×2=20)

1. a) What is analytical chemistry.
- b) Define the terms ppm and ppt.
- c) Mention different types of fluxes used in the decomposition of sample with examples.
- d) What are the advantages of single pan balance over equal arm balance?
- e) What is absolute error and relative error?
- f) Define iodine value.
- g) Give the structure of indigo.
- h) What are antibiotics? Give one example.
- i) What is addition polymerisation?
- j) What are enamines? Give example.
- k) Define alkalinity of water sample.
- l) Mention water pollution laws.
- m) Give the significance of arsenic in water pollution.
- n) Define biological degradation.
- o) Define hardness of water.

P.T.O.



**SECTION - B**  
**(Analytical)**

2. Answer any two of the following :

(2×4=)

- Explain the decomposition of samples with inorganic acids in open vessel.
- Explain the calibration operation of burette.
- What is precision ? Explain the different terms used to describe the precision of a set of replicate data.

3. Answer any two of the following :

(2×6=12)

- Write a note on cleanliness and neatness in analytical laboratory.
- Discuss about safety in the analytical laboratory.
- Explain about the rules of reporting analytical data.

**SECTION - C**  
**(Industrial Organic)**

4. Answer any two of the following :

(2×4=8)

- Write a note on saponification value.
- Discuss the classification of dyes based on application.
- Discuss the phenomenon of keto-enol tautomerism with reference to ethyl acetoacetate.

5. Answer any two of the following :

(2×6=12)

- Describe the manufacture of soaps by modern continuous process.
- Give the synthesis of
  - methyl orange
  - malachite green
- Give the synthesis of chloramine-T
  - Write a note on natural and synthetic rubber.



SECTION - D  
(Environmental)

6. Answer any two of the following :

(2×4=8)

- a) Explain the impact of water pollutants on environment.
- b) Explain the analysis of alkali metals in soil.
- c) Discuss about reuse and degradation of plastics.

7. Answer any two of the following :

(2×6=12)

- a) Write a note on industrial effluents and their treatment methods.
- b) Explain the measurements of DO, BOD and COD in water.
- c) Explain the estimation of following parameters in water sample :
  - i) acidity
  - ii) turbidity