JX-003-1015023 Seat No. _____

B. Sc. (Sem. V) (CBCS) Examination

October – 2019

BS - IC - 503 : Heavy & Fine Chemicals

Faculty Code : 003
Subject Code : 1015023

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions :

1) Question paper carries total 5 questions.
2) All the questions are compulsory and carry 14 marks each.
3) Draw labeled diagram wherever necessary.
4) Assume suitable data.

1 A: Answer the following questions : **4**

1. Write the raw materials required for production of ammonium nitrate.
2. For manufacturing of triple superphosphate, high grade of phosphate rock required. True/False ?
3. Nelson cell is also known as _____.
4. Give any two applications of lime stone.

B: Answer in brief : (any one out of two) **2**

1. Give properties of ammonium sulphate.
2. Give uses of silicon carbide.

C: Answer in detail : (any one out of two) **3**

1. Draw only diagram for production of carbon black.
2. Write a short note on natural graphite.

D: Write a note on : (any one out of two) **5**

1. Discuss manufacturing of phosphoric acid by electric arc furnace process.
2. Explain lime soda process with neat diagram.

2 A: Answer the following questions : **4**

1. Give molecular formula of Glauber's salt.
2. Give any two uses of HF.

3. Titanium dioxide is also called as _____.
4. Copper chromite is an inorganic compound. True/ False ?

B: Answer in brief : (any one out of two) **2**
1. Give applications of Vanadium oxide catalyst.
2. Write only reactions for manufacturing of iodine from brine.

C: Answer in detail : (any one out of two) **3**
1. Write a short note on sodium thiosulphate.
2. Discuss manufacturing of bromine from bittern.

D: Write a note on : (any one out of two) **5**
1. Explain manufacturing of borax with neat diagram.
2. Write a detailed note on Raney catalyst.

3 A: Answer the following questions : **4**
1. Give any two examples of anticaking agents.
2. What is anionic surfactant ?
3. Give full form of HIV.
4. Give any two uses of essential oils.

B: Answer in brief : (any one out of two) **2**
1. Write applications of surfactant.
2. Write a short note on citrol.

C: Answer in detail : (any one out of two) **3**
1. Discuss manufacturing of tartaric acid from argol.
2. Write a note on distillation process for manufacturing of essential oils.

D: Write a note on : (any one out of two) **5**
1. Explain manufacturing of citric acid with diagram.
2. Write a detailed note on emulsion.

4 A: Answer the following questions : **4**
1. Triphenyl phosphine can be used as polymerization inhibitor. True/False ?
2. Write applications of diethyl ether.
3. Give full form of THF.
4. Give molecular formula of perchloric acid.

B: Answer in brief : (any one out of two) **2**
1. Give properties of carbon tetrachloride.
2. Enlist raw materials used for manufacturing of acetaldehyde.

C: Answer in detail : (any one out of two) **3**

1. Write a short note on THF.
2. Explain manufacturing of Triethyl phosphate.

D: Write a note on : (any one out of two) **5**

1. Discuss production of aminoethanol with neat diagram.
2. Explain manufacturing of methylene chloride with diagram.

5 A: Answer the following questions : **4**

1. Oxidation of oxylene gives _____ product.
2. IPA can be converted in to acetone by _____ process.
3. Zeolite can be used as adsorbent. True/ False ?
4. Vinyl chloride is manufactured from ethylene and from _____.

B: Answer in brief : (any one out of two) **2**

1. Give uses of resorcinol.
2. Draw only diagram for manufacturing of vinyl acetate.

C: Answer in detail : (any one out of two) **3**

1. Write a brief note on Karl-Fischer reagent.
2. Discuss properties and uses of sodium bicarbonate.

D: Write a note on : (any one out of two) **5**

1. Explain manufacturing of melamine via low and high pressure process.
2. Discuss manufacturing of formaldehyde with diagram.