

B.Sc - III

Shivaji University, Kolhapur

Question Bank For Mar 2022 (Summer) Examination

Subject Code : 81677 Subject Name: Industrial Chemistry

Q1) Select the most correct alternatives among those given below and rewrite the sentence:

1. What is the name of chemicals which are used on commercial scale?
 - a) Industrial
 - b) Heavy
 - c) Toxic
 - d) King
2. Which of the following is the promotor used in the Haber process?
 - a) Ni
 - b) Cd
 - c) Mo
 - d) Fe
3. Which method is used to manufacture commercial sulphuric acid?
 - a) Ostwald
 - b) Haber
 - c) Contact
 - d) Friedel
4. Which catalyst is used for the manufacture of Nitric acid?
 - a) Pt-Rh
 - b) Pt-Os
 - c) Ni-Cu
 - d) Cu- Ni
5. What is the chemical name of soda ash?
 - a) Sodium carbonate
 - b) sodium bicarbonate
 - c) Sodium Chloride
 - d) Sodium iodide
6. Which chemical is manufactured by ammonia oxidation process?
 - a) Nitric acid
 - b) Sulphuric acid
 - c) Ammonium chloride
 - d) Sodium carbonate.
7. Which of the following is the oxidizing acid?
 - a) Nitric acid
 - b) Sulphuric acid
 - c) Hydrochloric acid
 - d) Acetic acid
8. Which chemical compound is used to prepare brine solution?
 - a) KOH
 - b) NaCl
 - c) KCl
 - d) NaOH

9. How much percentage of water present in Syrup?
- 9
 - 11
 - 85
 - 40
10. Which process is used for removal of impurities from the cane juice?
- Clarification
 - Crystallization
 - Distillation
 - Concentration
11. Which of the following is the byproduct of the sugar industry?
- Molasses
 - Bagasse
 - Both Molasses and Bagasse
 - Neither molasses nor Bagasse
12. Which principle is used in concentration of juice by using multiple effect evaporator?
- Boiling point of the liquid reduced under reduced pressure
 - Boiling point of the liquid reduced under increased pressure
 - Boiling point of the liquid is increased under reduced pressure
 - Boiling point of the liquid is remains constant under reduced pressure
13. In which process Compound imbibition technique is used?
- crystallize sugar from massecuite
 - concentrate sugar cane juice
 - extract juice from sugar cane
 - decolorize cane juice
14. How much sugar percentage adjusted in fermentation medium?
- About 10
 - About 20
 - About 30
 - About 40
15. What is the purpose of addition of ammonium sulphate to diluted molasses?
- Reduce pH
 - Increase pH
 - Neutralize acid
 - Promote bacterial growth
16. Where the most of cane juice is extracted?
- First mill
 - Crusher
 - Second mill
 - Third mill
17. "There is plenty of room at the bottom." Which Scientist makes this statement?
- Eric Drexler
 - Richard Smalley
 - Phillips
 - Richard Feynman
18. What is the size of the nanoparticle?
- 100 and 1000 nm
 - 1 to 100 nm
 - 0.1 to 10 nm

- d) above 1000 nm
19. How much is the size of quantum dot in nm?
- a) 5
 - b) 10
 - c) 50
 - d) 100
20. Which electrons produces TEM image?
- a) Backscattered electrons
 - b) Transmitted electrons
 - c) Auger electrons
 - d) Secondary electrons
21. What type of bond is formed between two carbon atoms?
- a) Covalent
 - b) Ionic
 - c) Metallic
 - d) Hydrogen
22. What is the nanometer wavelength range of visible light?
- a) 40 – 70
 - b) 400 – 700
 - c) 4000 – 7000
 - d) 40000 - 70000
23. What is the name of hole-electron pair in lattice?
- a) Lone-pair
 - b) Ion-pair
 - c) Positron
 - d) Exciton
24. In electrodeposition method, at which electrode nanoparticles are deposited?
- a) Cathode
 - b) Anode
 - c) Positive electrode
 - d) Any electrode
25. Which monomer is used for manufacturing of PVC?
- a) Polyethene
 - b) Chlorophane
 - c) Chloroethene
 - d) Styrene
 - e) Formaldehyde
26. Which of the following present in conducting polymers?
- a) Extended conjugation
 - b) Doped impurities
 - c) Blending of conducting element
 - d) Any of these
27. Which polymer have highest Interchain cross-linking?
- a) Thermosetting
 - b) Elastomers
 - c) Thermoplastics
 - d) Rubber

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d) Any of these process

38. What is used to produce best quality biodiesel?

- a) Canola
- b) olive oil
- c) soya oil
- d) all of these

39. Where the Petroleum resources are highest.

- a) Venezuela
- b) India
- c) United Arab Emirates
- d) Iraq

40. What is true about biodiesel?

- a) It is made from renewable resource
- b) It is a liquid mixture hydrocarbon in the size range C_9 to C_{22}
- c) It is mixed mono-alkyl esters of long-chain fatty acids
- d) It is clean fuel

Q2) Long answer type Questions (For 10 Marks) (Two out of Three)

1. Discuss the manufacturing plant and process of ammonia by Haber process
2. Explain the physico-chemical principles involved in the manufacture of sulphuric acid by contact process
3. Draw the diagram of manufacturing plant and explain the process of soda ash by Solvay process.
4. How is ethyl alcohol manufactured from molasses?
5. How the white sugar manufactured by one step processes?
6. Draw the sketch of multiple effect evaporator and describe in brief how juice is concentrated?
7. What are polymers? How are they classified?
8. Define polymerization. Discuss free radical addition polymerization.
9. Give the synthesis and properties of any two conducting polymers.
10. What is top-down and bottom-up fabrication? Explain sol-gel method.
11. Explain chemical vapour deposition and hydrothermal methods used for synthesis of nanomaterial.
12. What are the various applications of nanomaterials?
13. How fractionation of crude oil is carried out?
14. What are the advantages of solar energy? How it is used for power generation?
15. What are the applications of petrochemicals?

Q3) Short answer type Questions (For 4 Marks) (Three out of five)

1. What is petroleum and where does it occur?
2. What is octane and cetane Number?
3. Compare LPG with CNG.
4. Give the synthesis of any two petroleum products.
5. Explain in brief cracking in petroleum Industry.
6. Draw a neat sketch of mill house and describe the process of extraction of juice from sugarcane.
7. How sugar is crystallized?
8. Give the utilization of byproducts of sugar industry.
9. How fermentation medium is prepared?
10. Explain in brief clarification of juice.
11. What are the technical conditions to get high yield of ammonia by Haber process?