

August 2021

CHEMICAL TECHNOLOGY-II

Time Allowed: 1.5 Hours

Full Marks: 70

Answer to Question No.1 is compulsory and Answer any two questions from the rest.

1. Choose the correct answer/fill in the blanks (any twenty): 2x20
- i) Inversion of sucrose produces_____.
 - ii) Chemical formula of citric acid is_____.
 - iii) Zeigler process (a) produces high density polyethylene (b) produces low density polyethylene (c) uses no catalyst (d) employs very high pressure.
 - iv) Silicon carbide is a/an (a) adhesive (b) abrasive (c) type of glass (d) brittle material.
 - v) Catalyst used for manufacture of DDT is_____.
 - vi) _____ base crude oil is also called asphaltic crude. (a) paraffinic (b) naphthenic (c) mixed (d) aromatic.
 - vii) Celluloid is (a) cellulose acetate (b) regenerated cellulose (c) cellulose nitrate (d) cellulose acetate butyrate.
 - viii) Aspergillus Niger used for _____ manufacturing.
 - ix) Catalyst used during the manufacture of 'vanaspati ghee' is_____.
 - x) Cracking is_____ process.
 - xi) Which of the following is a yellow pigment? (a) Titanium di-oxide (b) ferrous sulphate (c) lead chromate (d) zinc sulphide.
 - xii) Polythene is a/an _____ polymerization product. (a) Addition (b) condensation (c) thermosetting (d) none of these.
 - xiii) Main product in calcium carbide –water reaction is_____.
 - xiv) Fermentation of molasses to produce ethyl alcohol is done at _____ °C.
 - xv) Fat dispersed in water is exemplified by (a) colloids (b) gel (c) butter (d) emulsion.
 - xvi) Starting material for the commercial production of ethyl alcohol in India is (a) rice (b) molasses (c) fruit of Mahua tree (d) maize.
 - xvii) The composition of vinegar is_____.
 - xviii) Basic raw material in the manufacture of titanium pigments are (a) perovskite (b) ilmenite (c) titanite (d) rutile.
 - xix) Thermofor catalytic cracking process is a process. (a) fixed bed (b) moving bed (c) fluidized bed (d) Non-Catalytic.

- xx) Petroleum coke is commercially produced by the process. (a) hydrocracking (b) visbreaking (c) fluid catalytic cracking (d) delayed coking.
- xxi) The basic difference between vegetable oil and fat is in their (a) density, (b) chemical properties, (c) physical state, (d) composition.
- xxii) Iodine value of an oil and fat is (a) the number of grams of iodine taken up 100gm of oil or fat, (b) a measure of its unsaturation and gives idea about its character, (c) helpful in finding its adulteration and its suitability for making soap, (d) independent of the type of oil whether it is drying or non-drying.
- xxiii) Plasticizers are added to paints to - (a) make it corrosion resistant, (b) make glossy surface, (c) give elasticity and prevent cracking of the film, (d) increase atmospheric oxidation.
- xxiv) Which oil is preferred for paint manufacture? (a) drying oil, (b) non drying oil, (c) semi drying oil, (d) saturated oil. <https://www.wbscteonline.com>
- xxv) Varnish does not contain (a) pigment, (b) thinner, (c) dryer, (d) anti skinning agent.
2. Write a short note on: (a) Hydrocracking, (b) Vacuum Distillation of crude Oil and (c) Petroleum Cracking. 5+5+5
3. Describe the process of refining of raw sugar with flow chart clearly mentioning the necessary steps. What is inversion of sugar? 10+5
4. Describe citric acid manufacturing process with flow chart. Write the application of citric acid and acetic acid. 10+5
5. Describe the manufacturing process of any vegetable oil with flow diagram. What is hydrogenation of oil and why it is required? 10+5
6. Describe the process of DDT manufacturing with flow diagram. What is BHC? What are the effects of DDT on environment? 8+3+4
7. Describe the manufacturing process of calcium carbide with flow sheet. Write down the important uses of silicon carbide and calcium carbide. 8+7
8. Describe the process with flow diagram for HDPE manufacturing. what is emulsion polymerisation. 8+7
9. a) Classify the different types of paint.
b) Write about the raw materials used in paint industry and their function.
c) Write the uses of varnish. 3+7+5

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