

[Time: 2:30 Hours]

[Marks:60]

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory. Choice is internal.
 2. Figures to the right indicate full marks.
 3. Draw figures and flowcharts wherever necessary.

- Q.1 A. Attempt any one.** **02**
- i) What is Sepharose?
 - ii) What are Cyclodextrins?
- B. Attempt any one.** **04**
- i) Explain the process for large scale production of starch
 - ii) List the sources from which pectin is obtained. Describe the process for its large scale production from any one source. **06**
- C. Attempt any one.**
- i) What are modified carbohydrates? Give examples long with their applications.
 - ii) Explain the process of manufacturing and refining of cane sugar.
- Q.2 A. Attempt any one.** **02**
- i) What are lubricants?
 - ii) What are biosurfactants?
- B. Attempt any one.** **04**
- i) Write an informative note on extraction and applications of plant pigments.
 - ii) What are essential oils? Explain the process for extracting essential oil from any one suitable plant source. **06**
- C. Attempt any one.**
- i) Describe the process for extracting oil from ground nuts. Add a note on refining of vegetable oils.
 - ii) What is biodiesel? Explain its production from Jatropha plant.
- Q.3 A. Attempt any one.** **02**
- i) Explain 'Green house effect'.
 - ii) Define BOD. Add a note on its significance.
- B. Attempt any one.** **04**
- i) Discuss the toxic effects of heavy metals.
 - ii) Write a note on air pollutants.
- C. Attempt any one.** **06**
- i) Write a note on the sources of water pollutants and their effects on human health.
 - ii) Discuss the health hazards of noise pollution. Add a note on the measures taken to control noise pollution.

[P.T.O]

- Q.4 A. Attempt any one.** **02**
i) Explain the term GLP.
ii) What are nanoparticles?
- B. Attempt any one** **04**
i) Explain the terms.
a) Bioethics
b) Quality control
ii) Write an informative note on biofilms.
- C. Attempt any one.** **06**
i) What are liposomes? Discuss any one method of formation of liposomes and add a note on their applications.
ii) What are biosensors? Add a note on their applications.
- Q.5 A. Attempt any one.** **03**
i) Write in brief on Gum Arabic.
ii) Name the by-products of sugar industry and add a note on their applications.
- B. Attempt any one.** **03**
i) Write a brief note on extraction of chlorophyll.
ii) Give the industrial applications of any two of the following
a) Sterols b) Lecithin c) Glycerol
- C. Attempt any one.** **03**
i) What is 'Green Chemistry'?
ii) Explain the terms COD and dissolved oxygen.
- D. Attempt any one.** **03**
i) Write a brief note on diagnostic kits.
ii) Give a brief account on the maintenance and management of experimental animals.
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