

(3 Hours)

[Total Marks: 100]

N.B.:

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Draw neat labelled diagrams wherever necessary.

Q1. Answer any TWO of the following:

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- A) Explain the sequencing of DNA by chemical degradation method.
- B) Explain the steps involved in Polymerase Chain Reaction technique.
- C) Comment on the applications of DNA barcoding in plants.
- D) Write a note on "Present status of DNA barcoding in plants."

Q2. Answer any TWO of the following:

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- A) Give a detailed account of DDBJ, EMBL & GenBank as nucleic acid databases.
- B) Write a note on ENTREZ describing any five databases.
- C) Explain protein analysis using comparative modelling.
- D) Give the classification of homologs. How does the study of these proteins help to distinguish between different proteins?

Q3. Answer any TWO of the following:

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- A) Explain the method used for extracting essential oil from fresh flowers of Rose. Give an account on benefits of Rose oil.
- B) What is semi-drying oil? Write the botanical name, plant part used, geographical location, extraction procedure and uses of Cotton seed oil
- C) What are non- drying oils? Write the botanical name, plant part used, graphical location, extraction procedure and uses of Olive oil.
- D) Define drying oils. Write the botanical name, plant part used, geography location, extraction procedure and uses of Soybean oil.

Q4. Answer any TWO of the following:

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- A) With reference to osmotic drying, discuss the technique of drying.
- B) Define freezing. Explain the different freezing methods used in food preservation techniques.
- C) With reference to jams, explain how sugar concentrates are made?
- D) Discuss the use of antioxidants as preservatives.

Q5. Write Short Notes on: (any FOUR)

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- a) Enzymes involved in pyrosequencing.
- b) Principle of Sangers method
- c) BLAST
- d) Characteristics of Champaca oil
- e) Digestion of the Palm fruits
- f) Dehydro freezing