[Time : 3 Hours] **[Marks : 80]**

Please check whether you have got the right question paper.

N.B:
1. **All** questions are **compulsory**.
2. **Illustrate** answers with **sketches** and **structures** wherever **required**.
3. **Answers** to **sub-questions** must be **written together**.

1. (a) State whether true or false and justify all the statements with significant reasons or examples: **8**
   - i) Agar is an example of plant origin crude drug.
   - ii) Chlor-zinc Iodine solution is used for identification of lignified tissues.
   - iii) Calcium carbonate is an ergastic cell content.
   - iv) Fehling's reagent is used to differentiate between carbohydrates and lipids.
   - v) Coppicing method is used for collection of leaf-based crude drugs.
   - vi) Silk is a protein fiber.
   - vii) Agar is pathological product.
   - viii) Lectins are used for protein digestion.

   (b) Answer the following : **12**
   - i) Give merits and demerits of morphological classification of crude drug.
   - ii) Enlist four examples each of chemomicroscopic reagents.
   - iii) Differentiate between gums and mucilages.
   - iv) Write a brief note on lignans.
   - v) What is mutation and hybridization? Give suitable examples.
   - vi) Write a note on chalk.

2. (i) Explain the status & significance of pharmacognosy in Homeopathy & arorna therapy. **4**

   (ii) With the help of suitable labelled diagrams, explain the salient histological features of stem & root-based drugs.

   (iii) What are Fats? Explain the source, preparation, constituents and use of Shea butter.

3. (i) Give detailed classification of different types of inflorescence. **4**

   (ii) What is resin? Classify resin and resin combinations with suitable examples and their applications. **4**

   (iii) Give complete pharmacognostic account of gum which is an organized drug. **4**

4. (i) Write one example, important biological activity and structure of basic chemical nucleus for : **4**
   a) Pyridine-piperdine / Indole Alkaloid
   b) Flavonoid / Isothiocyanate Glycoside
   (ii) Write a note on drying and storage of DONO. **4**
   (iii) Write a note on proteolytic enzymes obtained from plant source. **4**

5. (i) Write a note on tannins and polyphenolic compounds. **4**
   (ii) Write source, preparation chemistry and commercial utility of "Cottons". **4**
   (iii) Write biological source, chemical constituents and uses of Karela and Tinospora. **4**

6. (i) Write in detail about subterranean stem moditication. **4**
   (ii) a) Write names of marketed formulations containing serratiopeptidise and their applications. **2**
   b) Give source, constituents and uses of neem. **2**
   (iii) Give a brief account of rice bran oil and wheat germ oil. **4**