[Time: 3 Hours] **[Marks: 70]**

Please check whether you have got the right question paper.

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

Q.1 a) Correct the statements if required & justify all the statements with significant reasons or examples. **(07)**

1) Presence of tropane alkaloids in Solanaceae represents chemotaxonomical classification.
2) Indole acetic acid is used for ripening of fruits.
3) Stone cells can be stained using phloroglucinol and Hydrochloric acid.
4) Glycosides are primary metabolites.
5) Ash value is indicates the presence of organic matter.
6) Sterculia gum has acetic acid odour.
7) Ricin is an example of protein derivative.

b) Answer briefly. **(08)**

i) Give the morphological and histological differences between allied species of cinnamon.
ii) Give two examples of tannin-based drugs with structures of relevant phytoconstituents and applications.
iii) Give applications of asbestos and glasswool as pharmaceutical aid.
iv) State the sources and applications of streptokinase.

Q.2 i) Comment on the role of pharmacognosy in Ayurvedic system of medicine. **(03)**
ii) Draw neat labelled diagram to differentiate between histological features of monocot and dicot root. **(04)**
iii) Write a note on Acacia or Isapghol. **(04)**

Q.3 i) State principle and commercial applications of microwave extraction. **(03)**
ii) Discuss the microscope evaluation of crude drugs. **(04)**
iii) Compare and contrast absorbent and Non-absorbent cotton. **(04)**

Q.4 i) Discuss the advantages and disadvantages of morphological and pharmacological classification of crude drugs. **(03)**
ii) Discuss the factors affecting cultivation of crude drugs. **(04)**
iii) Give general method for extraction of alkaloids. **(04)**

Q.5 i) Write a note on calcium oxalate crystals. **(03)**
ii) Discuss the different types of inflorescence. **(04)**
iii) Differentiate adulteration and substitution of crude drugs with suitable examples. **(04)**

Q.6 i) Give source, preparation and uses of pepsin. **(03)**
ii) With the help of suitable structures outline the shikimic acid pathway. **(04)**
iii) Give the role of plant growth hormones in propagation of plants. **(04)**

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