

Time: 3 Hours

Total Marks: 80

N.B.:

1. All questions are compulsory.
2. Draw structures & diagrams wherever necessary.

Q1. Answer the following

(20M)

- i. Rhubarb is preferred over Senna for purgative action; justify.
- ii. Give the specific chemical test and observation for quinine alkaloid.
- iii. Define glycoproteins with suitable example.
- iv. Mention chemical test to identify flavonoids. Draw structure of nucleus of flavanol.
- v. Marker compounds are important in herbal drug analysis; justify with suitable example.
- vi. With suitable example state two parameters for herbal drug analysis as per U.S.P.
- vii. Write any two differences between Phytopharmaceuticals and Proprietary medicines.
- viii. Mention two challenges in preparation of Herbal capsules.
- ix. Give the specific chemical test and observation for cardiac glycosides.
- x. Write Biological source and give structure of an alkaloid derived from phenylalanine.

Q2. Answer the following

(12M)

- i. Discuss method of collection and chemistry of opium alkaloids.
- ii. Write biosynthetic pathway for quinine alkaloid.
- iii. Draw the chemical structure and give any two spectroscopic parameters for Rutin.

Q3. Answer the following

(12M)

- i. Classify cardiac glycosides with suitable examples and discuss chemistry of Digitalis.
- ii. Write a note on cyanogenetic glycosides.
- iii. Write a note on stability testing of herbal medicines with respect to marker compound.

Q4. Answer the following

(12M)

- i. Give source, chemistry and therapeutic applications of any two drugs containing alkaloidal amines.
- ii. Write a note on source, chemistry and biopotential of Lignans.
- iii. Discuss pharmacokinetics of herb-drug interactions with two suitable examples.

Q5. Answer the following

(12M)

- i. Write biological source, extraction, identification and uses of phytoconstituents of Licorice.
- ii. Give a detailed account of Aloes.
- iii. Discuss monograph of any one excipient of natural origin mentioned in I.P.

Q6. Answer the following

(12M)

- i. Write biological source and one marketed formulation of the following-
 - a) An alkaloid used for improving bioavailability.
 - b) An alkaloid used for glaucoma.
 - c) A steroidal alkaloid used for amoebiasis.
 - d) An alkaloid used as bronchodilator
- ii. Give an account of regulatory issues for ASU formulations.
- iii. With two suitable examples explain the detoxification of Ayurvedic drugs.