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| 11 | 18th position of reserpine shows the presence of<br>Trimethoxy benzoic acid<br>Dihydroxy benzoic acid                   | Trimethoxy cinnamic acid<br>Dihydroxy cinnamic acid |                   |
| 12 | Caffeine is obtained from<br>Coffea arabica   | Cola acuminata<br>Theobroma cacao                   | All of the above  |
| 13 | Gerrards test is performed for the identification of<br>Atropine  | Scopolamine<br>Hyoscymine                           | All of the above  |
| 14 | Following phytoconstituents contain an Endoperoxide ring<br>Reserpine   | Artemisin<br>Vinblastine                            | None of the above |
| 15 | Saponins causes haemolysis of RBC due to the presence of<br>Sterols   | Proteins<br>Carbohydrates                           | Carotenoids       |
| 16 | Cleavage of a bond between 7 and 8 position of cyclopentanopyran ring gives rise to a subclass known as<br>Secoiridoids | Enterodiol<br>Enterolactone                         | Naphthaquinones   |
| 17 | Z-Guggulserones are obtained from<br>Commiphora molmol<br>Commiphora abyssynica   | Commiphora wightii<br>Commiphora erythraea          |                   |
| 18 | Forskolin is obtained from<br>Plectranthus barbatus<br>Podophyllum hexandrum  | Catharathus roseus<br>Artemisia annua               |                   |
| 19 | Senoside is isolated as calcium salt for<br>Increasing solubility<br>Increasing stability                               | Increasing activity<br>All of the above             |                   |
| 20 | Following is the references standard used in NMR Spectroscopy<br>Tri Methyl Silane<br>Di Methyl Silane                  | Methyl Silane<br>Tetra Methyl Silane                |                   |

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**Question Paper**

Exam Date & Time: 18 April 2021 (2 pm to 5 pm)

**MANIPAL ACADEMY OF HIGHER EDUCATION  
Pharmacognosy and Phytochemistry II [PCP-BP504T]**

Sections Duration: 150 mins (2:30 pm to 5 pm)

**I Long Answers**

**Answer all the questions.**

- 1) a) What are Anthracene glycosides? Give their chemical nature and identification tests. (10)  
(1+2+2)  
b) Explain Senna with reference to source, morphology, chemical constituents and uses. (10)  
(1+2+1+1)
- 2) With the help of neat labelled diagram explain Counter current chromatography and HPLC for the separation of phytoconstituents. (10)

**III Short Answers**

**Answer all the questions.**

- 1) Explain the industrial production, estimation and utilization of Digitoxin. (5)
- 2) Give the Shikimic acid pathway and its significance (5)
- 3) Give the biological source and Explain the isolation of Diosgenin from different sources (5)
- 4) Give an account of Phenyl propanoids and Flavonoids with their identification test (4+1) (5)
- 5) Give the Biological source and explain the isolation and identification of Quinine (5)
- 6) Application and working of Mass spectroscopy in the identification and characterization of the phytoconstituents (5)
- 7) Give the biological source, method of preparation and uses of Rosin. (5)

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