

Exam Date &amp; Time: 05-Dec-2022 (10:00 AM - 01:00 PM)



# MANIPAL ACADEMY OF HIGHER EDUCATION

## Pharmacognosy and Phytochemistry II [PCO-BP504T - S2]

Marks: 75

Duration: 180 mins.

### I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) Isopentenyl Pyrophosphate and its isomer Dimethylallyl Pyrophosphate serves as the basis for the biosynthesis of (1)
- |                  |             |                        |                     |
|------------------|-------------|------------------------|---------------------|
| 1) Volatile oils | 2) Steroids | 3) Carotenoid pigments | 4) All of the above |
|------------------|-------------|------------------------|---------------------|
- 2) (±) Hyoscyamine is (1)
- |             |                |             |              |
|-------------|----------------|-------------|--------------|
| 1) Atropine | 2) Scopolamine | 3) Hyoscine | 4) Reserpine |
|-------------|----------------|-------------|--------------|
- 3) Hydroxy methyl glutaryl CoA on reduction gives (1)
- |                          |                           |                   |                |
|--------------------------|---------------------------|-------------------|----------------|
| 1) Geranyl pyrophosphate | 2) Farnesyl pyrophosphate | 3) Mevalonic acid | 4) Acetic acid |
|--------------------------|---------------------------|-------------------|----------------|
- 4) Sennoside A and Sennoside B are dimeric glycosides of (1)
- |                |          |           |                 |
|----------------|----------|-----------|-----------------|
| 1) Aloe-emodin | 2) Rhein | 3) Emodin | 4) Chrysophanol |
|----------------|----------|-----------|-----------------|
- 5) Thalleioquin test is performed for the identification of (1)
- |             |             |              |            |
|-------------|-------------|--------------|------------|
| 1) Curcumin | 2) Atropine | 3) Digitoxin | 4) Quinine |
|-------------|-------------|--------------|------------|
- 6) Prephenic acid on dehydration and decarboxylation leads to the formation of (1)
- |                     |                                 |                        |               |
|---------------------|---------------------------------|------------------------|---------------|
| 1) Anthranilic acid | 2) Phosphoribosyl pyrophosphate | 3) Phenyl pyruvic acid | 4) Tryptophan |
|---------------------|---------------------------------|------------------------|---------------|
- 7) Weakly basic alkaloid of Rauwolfia is (1)
- |              |               |               |                        |
|--------------|---------------|---------------|------------------------|
| 1) Reserpine | 2) Ajmalicine | 3) Serpentine | 4) Tetrahydroalstonine |
|--------------|---------------|---------------|------------------------|
- 8) Following compound is used as a steroidal precursor (1)
- |               |              |              |          |
|---------------|--------------|--------------|----------|
| 1) Sennosides | 2) Reserpine | 3) Diosgenin | 4) Rutin |
|---------------|--------------|--------------|----------|
- 9) Following compound stimulates the nerve endings which are sensitive to cold, result in cool feeling (1)
- |           |          |            |             |
|-----------|----------|------------|-------------|
| 1) Citral | 2) Neral | 3) Menthol | 4) Geraniol |
|-----------|----------|------------|-------------|

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10) Following is the detector works on the principle of collection of ions

1)	Solid scintillation counter	2)	Geiger-Muller counter	3)	Liquid scintillation counter	4)	Multi-pixel photon counter	(1)
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11) Indian bdellium is the synonym of

1)	<i>Commiphora molmol</i>	2)	<i>Commiphora wightii</i>	3)	<i>Commiphora abyssynica</i>	4)	<i>Boswellia serrata</i>	(1)
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12) Following is a semisynthetic anticancer compound

1)	Vinblastine	2)	Podophyllotoxin	3)	Etoposide	4)	Artimisinin	(1)
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13) Keller-Kiliani test signifies

1)	Desoxy sugar	2)	5-membered unsaturated lactone ring.	3)	Steroid nucleus	4)	Activated methylene group at C-21 in the lactone	(1)
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14) Sennoside is isolated as calcium salt for

1)	Increasing solubility	2)	Increasing activity	3)	Increasing stability	4)	All of the above	(1)
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15) Glycyrrhizin is a

1)	Tetracyclic triterpenoid	2)	Steroid	3)	Pentacyclic triterpenoid	4)	Lignan	(1)
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16) Flavonoids are derivatives of

1)	Benzo- $\alpha$ -pyrone	2)	Benzo- $\beta$ -pyrone	3)	Benzo- $\gamma$ -pyrone	4)	Benzo- $\delta$ -pyrone	(1)
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17) Chemically enterodiol and enterolactone are

1)	Flavonoids	2)	Naphthoquinones	3)	Lignans	4)	Iridoids	(1)
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18) Which of the following phytoconstituent used in the prevention of restenosis of peripheral stents

1)	Vincristine	2)	Reserpine	3)	Taxol	4)	Podophyllotoxin	(1)
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19) Vinblastine is obtained from

1)	<i>Catharanthus roseus</i>	2)	<i>Plectranthus barbatus</i>	3)	<i>Artemisia annua</i>	4)	<i>Taxus baccata</i>	(1)
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20) Paper chromatography is a

1)	Adsorption chromatography	2)	Counter current chromatography	3)	Partition chromatography	4)	Absorption chromatography	(1)
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### II Long Answers

Answer all the questions.

- 1) What are Alkaloids? Describe the general properties and nitrogen of alkaloids (2+2+1). Give the source family and active constituents of Vinca and Opium (10)
- 2) Explain the following extraction methods with its advantage, disadvantage and factors effecting these methods a) Maceration and its types b) Percolation method (10)

### III Short Answers

Answer all the questions.

- 1) Give the biological source and explain the industrial production, estimation and utilization of sennosides (5)
- 2) Give the Shikimic acid pathway and its significance (4+1) (5)
- 3) Give the biological source, identification test and utilization of a) Digitoxin b) Caffeine (5)
- 4) Give an account of Iridoids and naphthoquinones with examples (2.5 each) (5)
- 5) Give the biological source, explain the isolation and analysis of Citral (5)
- 6) With the help of neat labelled diagram, explain HPLC as a tool for separation and identification of phytoconstituents (5)
- 7) What are cardiac glycosides? Give their chemistry and identification tests (1+2+2) (5)

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