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**PY 132806**

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**2019**

**B.Pharm. 8th Semester (ESE) End-Term  
Examination**

**PHARMACOGNOSY – VI  
(Industrial Pharmacognosy)**

Full Marks – 100

Time – Three hours

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The figures in the margin indicate full marks  
for the questions.

Answer all questions.

1. Choose the correct answers :

(10 × 1 = 10)

- (i) Which of the following oil is regarded as 'Fixation oil'?
- (a) Clove oil
  - (b) Sandalwood oil
  - (c) Mustard oil
  - (d) Vetiver oil
- (ii) Which of the following precursor is used for the synthesis of menthol?
- (a) Limonene
  - (b) Eugenol
  - (c) Catechol
  - (d) *p*-cymene

[Turn over

- (iii) Which one of the following *Eucalyptus* species is rich in Phellandrene?
- (a) *Eucalyptus globulus*
  - (b) *Eucalyptus euriodora*
  - (c) *Eucalyptus piperata*
  - (d) *Eucalyptus amygdalina*
- (iv) What is the minimum autoclaving temperature to sterilize a culture media?
- (a) 120°C
  - (b) 121°C
  - (c) 122°C
  - (d) 100°C
- (v) What is the toxic constituent of Winter Green oil?
- (a) Salicylic acid
  - (b) Methyl Salicylate
  - (c) Propyl salicylate
  - (d) None of the above
- (vi) Indole Acetic Acid (IAA) causes inhibition of \_\_\_\_\_.
- (a) seed germination
  - (b) bud formation
  - (c) root elongation
  - (d) chlorosis

- (vii) Which of the following plant ingredient that prevents the possible crystallization of sugars?
- (a) Acacia gum
  - (b) Alfalfa
  - (c) Honey
  - (d) None of the above
- (viii) In chemotaxonomy of polysaccharides, insulin is the characteristics of which of the following family?
- (a) Rubiaceae
  - (b) Rosaceae
  - (c) Compositae
  - (d) Graminae
- (ix) Botanical name of saffron is \_\_\_\_\_.
- (a) *Crocus sativus*
  - (b) *Rosa canina*
  - (c) *Helianthus annuus*.
  - (d) *Tamarindus Indica*
- (x) Which of the following is the chief constituent of garlic?
- (a) Prostaglandins A<sub>2</sub>
  - (b) Riboflavin
  - (c) Allicin
  - (d) None of the above

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Answer the following : (any six) : (6 × 15 = 90)

2. (a) Define the following terms : (5 × 1 = 5)
- (i) Nutraceuticals
  - (ii) Attars
  - (iii) Chemotaxonomy
  - (iv) Polyunsaturated fatty acids
  - (v) Minimum autoclaving time.

(b) Give in short the difference between the following : (5 × 2 = 10)

- (i) aromatic oils and fixed oils
- (ii) macro nutrients and micro nutrients
- (iii) liquid culture media and semi-solid culture media
- (iv) probiotics and prebiotics
- (v) biological treatment and thermal treatment of water.

3. (a) Define gelling agent. Enumerate the different types of gelling agent and describe in detail the establishment and maintenance of protoplast culture with a schematic diagram. (1+2+7)

(b) Match the following : (5×1=5)

Group A

Group B

- |                          |     |  |
|--------------------------|-----|--|
| (i) Nitrogen deficiency  | (1) | retardation of cell division and cell elongation     |
| (ii) Iron deficiency     | (2) | Cessation of cell division                           |
| (iii) Sulphur deficiency | (3) | appearance of anthcyanins and vessels are not formed |
| (iv) Calcium deficiency  | (4) | appearance of apparent chlorosis                     |
| (v) Boron deficiency     | (5) | loss of cell durability                              |

4. (a) Justify in short to the following questions :

(5 × 2 = 10)

- (i) In PTC, why autoclave sucrose is better preferred than filtered sterilized sucrose?
- (ii) Why menthol is used during colonoscopy or rectal barium sulfate administration for X-ray?
- (iii) Why  $\text{FeCl}_3$  and  $\text{FeSO}_4$  is not a good source of Iron for culture media?
- (iv) Why bioindicators are used in the sterilization of culture media?
- (v) Why Omega-3 fatty acid is useful and beneficial in health food preparation?

(b) Fill in the gaps : (5×1=5)

- (i) Carotene extracts are sometimes referred to as \_\_\_\_\_ extract.
- (ii) Botanical name of fennel is \_\_\_\_\_.
- (iii) DSHEA stands for \_\_\_\_\_.
- (iv) Pungent flavours of capsicum are due to \_\_\_\_\_ active constituents.
- (v) In food, coriander is mainly used as \_\_\_\_\_.

5. (a) Write a note on the regulations regarding using herbs as health foods. (3)

(b) Write a detail note on any *three* of the following. (3 × 4 = 12)

- (i) Source, chemical constituents and utilization of Honey in health foods.
- (ii) Source, chemical constituents and utilization of Liquorice in health foods.
- (iii) Source, chemical constituents and utilization of Saffron in health foods.
- (iv) Source, chemical constituents and utilization of Turmeric in health foods.

6. (a) Define Herbal cosmetics. Classify Herbal cosmetics and give one example of herbal cosmetics formula which is manufactured by Pharmacognostical Industries (1+3+2)
- (b) Write a detail note on any *two* of the following : (4.5 × 4.5 = 9)
- (i) Source, chemical constituents and utilization of Aloe Vera in herbal cosmetics.
- (ii) Source, chemical constituents and utilization of Bhringraj in herbal cosmetics.
- (iii) Source, chemical constituents and utilization of Henna in herbal cosmetics.
7. (a) Write a note on water treatment process. (3)
- (b) Define solid waste management. Give the source, classification and composition of solid waste management. (1+2+2+2)
- (c) Write a detail note on green house gases. (5)
8. (a) Define aromatic oils. Classify the medicinal plant based industries. (1+2)
- (b) Write a detail note on any *one* of the following. (6)
- (i) Source, propagation, production and utilization of diosgenin.
- (ii) Source, propagation, production and utilization of quinine sulphate.
- (c) Describe in detail the source and utilization of aromatic plants with reference to Vetiver oil. (6)

9. (a) Give the principle of Chemotaxonomy. Write in detail note on the different systems involve in the development of chemotaxonomy. (3+3)
- (b) Write a detail note on any *one* of the following. (9)
- (i) Chemotaxonomy of alkaloids.
  - (ii) Chemotaxonomy of glycosides.

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