

	TANTA UNIVERSITY FACULTY OF PHARMACY DEPARTMENT OF PHARMACOGNOSY			
	EXAMINATION FOR PRE-PHARMACY STUDENTS			
	COURSE TITLE:	Botany and Medicinal Plants		COURSE CODE: 1035
DATE:	11/1/2017	TERM: FIRST	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 120 MINUTES

All questions should be attempted (total 10 pages)

Part I: Question I:

(51 marks, 40 minutes)

Give the meaning of the following statements, then mention the different types of each.

Put your answers in the Table (1)

- a- All the tissues inside the endodermis (1), its types are (2-6).
- b- They are end products of metabolisms (7), Their types are (8-15).
- c- It has a smooth fruit (16).
- d- It is the main part of the stele formed of phloem and xylem (17), Its types are (18-21). The secondary wall of the xylem may be pierced by numbers of thickening named (22-26).
- e- A simple tissue has unevenly thickened walls (27). It is used as (28).
- f- They are specialized structures adopted for production of certain active constituents (29). These includes several types as (30-34).

Table (1)

No.	Answer	No.	Answer
1		18	
2		19	
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16		33	
17		34	

Question II:

(24 marks, 20 minutes)

Write the missed items in the Table (2), then answer the question presents under the Table.

Table (2)

Drug name	Biological origin	Active constituents	Uses
1-			1-treatment of goiter 2- 3-
2- Colchicum			

Give the meaning of the different species of the drug No 1

a-

b-

c-

Part II: Medicinal leaves

(50 x 1.5 = 75 marks, 60 minutes)

Select only one answer from the following questions and mark all the answers in the Answer Sheet.

1- Hydathodes are:

- a- Modified water pores
- b- Type of secretory tissue in roots
- c- They secrete volatile oil
- d- None of the above

2- Isobilateral leaf is:

- a- A leaf with palisade cells only in one side at upper epidermis
- b- Found in stramonium and belladonna
- c- Found in senna and *Hyoscyamus muticus*
- d- All of the above

3- Compound leaves are found in:

- a- Jaborandi, family Rutaceae
- b- *Cassia angustifolia*, family Ericaceae
- c- *Cassia acutifolia*, family Leguminosae
- d- Both a & c

4- Which of the following is true about bracts & bracteoles:

- a- Bract is a small leaf from its axil arises a spine as in family Compositae
- b- Group of bracteoles forms an involucre
- c- Spiklet of family Gramineae contains glume and palea
- d- All of the above

5- The following plant contains alkaloid which is used as a local anesthetic in minor surgery:

- a- Buchu leaves
- b- Eucalyptus leaves
- c- Coca leaves
- d- Uva ursi leaves

6- The following drug is used as purgative:

- a- Senna leaflets
- b- Coca leaves
- c- *Hyoscyamus* leaves
- d- *Hamamelis* leaves

7- Alkaloids are found in:

- a- Solanaceous leaves
- b- Jaborandi leaflets
- c- Boldo leaves
- d- All of the above

8- Which of the following is used as expectorant:

- a- Squill
- b- Digitalis
- c- Buchu
- d- Henbane

9- Which of the following is a cardiac glycoside:

- a- Scillaren A
- b- Lanatoside
- c- Digitoxin
- d- All of the above

- 10- All of the following is **true except**:
- a- Anticholinergic plant has a mitotic effect on eye pupil
 - b- We could use atropine as antidote for organophosphate poisoning
 - c- Hyoscine has sedative effect
 - d- Tropane alkaloids are found in *Hyoscyamus niger*
- 11- Crystal layer and clavate hair are present in the powder of:
- a- *Atropa belladonna*
 - b- *Barosma betulina*
 - c- *Datura stramonium*
 - d- *Digitalis purpurea*
- 12- This plant belongs to family Myrtaceae and contains volatile oil:
- a- Eucalyptus leaves which contain cineole
 - b- Buchu leaves which contain diosphenol
 - c- Guafa leaves which contain limonene
 - d- Both a & c
- 13- To distinguish between **powder** of *Hyoscyamus niger* & *Hyoscyamus muticus*:
- a- Collenchymatous cells are found in the midrib of *Hyoscyamus muticus*
 - b- Isobilateral palisade cells are found in *Hyoscyamus niger*
 - c- Branched glandular trichomes are found only in *Hyoscyamus muticus*
 - d- None of the above
- 14- Decurrent lamina base is found in:
- a- Eucalyptus leaves
 - b- *Digitalis purpurea* leaves
 - c- Cherry laurel leaves
 - d- *Barosma serratifolia*
- 15- All of the following is **true except**:
- a- Crystal layer of *Hyoscyamus niger* composed of calcium oxalate prisms
 - b- Crystal layer of *Datura stramonium* composed of calcium oxalate clusters
 - c- Pilocarpine has the reverse effect of boldine alkaloid
 - d- Atropine has antispasmodic effect
- 16- All of the following is **false except**:
- a- Arbutin is a phenolic glycoside & obtained from vinca rosea
 - b- Henna leaves contain lawsone which is a coloring matter
 - c- Laurocerasin is a cyanogenic glycoside which is found in uva ursi
 - d- Hamamelis, eucalyptus & guafa leaves are used as astringent
- 17- Pilocarpine is found in leaves of :
- a- Rosemary as a member of family Labiateae
 - b- Squill as a member of family Liliaceae
 - c- Jaborandi as a member of family Rutaceae
 - d- Jaborandi as a member of family Ericaceae

18- Imparipinnate compound leaves contain :

- a- Two types of asymmetric leaflets and third type of symmetric leaflet
- b- Only one type of asymmetric leaflets
- c- Only two types of leaflets
- d- Even numbers of leaflets

19- Stomatal index:

- a- Is constant for each species and do not change by age or size of leaves
- b- It could be used to differentiate between Alexandrian and Indian senna
- c- Is the percentage of palisade cells to total number of palisade and epidermal cells
- d- Both a & b

20- Regarding examples of leaves modification, the following is true except:

- a- As phyllode which is a modified lamina
- b- As spines for protection
- c- As fleshy leaves for storage of water
- d- As tendril for climbing

21- Phyllotaxis of leaves could be:

- a- Amplexicaul
- b- Sagittate
- c- Verticillate or whorled
- d- Both a & c

22- All of the following is true except:

- a- Cauline leaves arranged on long stem
- b- Radicle leaves originate from the same point at top of the root
- c- In spiral arrangement of leaves each two opposite leaves originate from the same node
- d- Opposite leaves arranged along the stem in one plane

23- Regarding the sessile leaf base all of the following is false except:

- a- Sheath leaf base is found only in scale leaves
- b- The base of decurrent leaf forms a vertical coat surrounding the stem
- c- Connate leaves are two opposite leaves that fused at the base around the stem
- d- Perfoliate leaf is composed of three leaves fused at the base

24- Function of ligule of a sheathed leaf base is:

- a- To support the stem
- b- To stop water entering between leaf sheath and leaf blade
- c- To protect the leaf lamina from insects
- d- None of the above

- 18-1
- 25- Regarding the venation of leaves all of the following is false except:
- a- Vein islet number could be calculated in leaves with reticulate venation
 - b- Palmate reticulate leaves are uncostate leaves
 - c- Parallel like venation are found in *Digitalis purpurea*
 - d- Palmate reticulate venation are found in *Datura stramonium* leaves
- 26- Sagittate leaf has general outline of:
- a- Spear shape
 - b- The head of an arrow
 - c- A rectangular shape
 - d- As needles
- 27- Deltoid leaf has a general lamina outline with:
- a- The widest part at the top
 - b- The widest part at the base
 - c- The widest part at the middle
 - d- Uniform shape
- 28- The texture of leaves:
- a- Could be papery as in senna leaflets
 - b- Could be membranous as in squill
 - c- Could be coriaceous as in eucalyptus and coca leaves
 - d- All of the above
- 29- Cyanogenic glycosides are found in:
- a- Eucalyptus leaves
 - b- Mentha leaves
 - c- Cherry laurel leaves
 - d- Vinca rosea
- 30- Modified borntreger's test is for identification of:
- a- Cardiac glycosides
 - b- Anthraquinone glycosides
 - c- Cyanogenic glycosides
 - d- None of the above
- 31- This plant used as rubefacient:
- a- Uva ursi as it contains arbutin
 - b- Wintergreen as it contains gaultherin which gives on hydrolysis methyl salicylate
 - c- Both b & d
 - d- Eucalyptus as it contains volatile oil mainly of cineole
- 32- Volatile oil is an important constituent in:
- a- Mentha leaves
 - b- Guafa leaves
 - c- Rosemary leaves
 - d- All of the above

33- Wintergreen and uva ursi leaves:

- a- Both are members in family Ericaceae
- b- Are succulent leaves
- c- Are used as cardiogenic
- d- Are compound pinnate leaves

34- All the following about Solanaceous leaves is true except:

- a- *Hyoscyamus muticus* has bicollateral vascular bundles
- b- *Datura stramonium* leaf is simple with coarsely dentate margin
- c- Second biennial leaves of *Hyoscyamus niger* is oblong ovate
- d- *Atropa belladonna* leaf has serrate margin

35- Tropane alkaloids are found in:

- a- All parenchymatous cells especially epidermal cells in stramonium leaves
- b- Leaves, flowers, fruits, roots and seeds of belladonna
- c- *Hyoscyamus* leaves and flowering tops
- d- All of the above

36- This plant has strong aromatic odor:

- a- *Barosma betulina*
- b- *Digitalis lanata*
- c- *Cassia acutifolia*
- d- Coca leaves

37- About buchu leaves:

- a- They have smooth surface due to presence of oil glands
- b- *Barosma betulina* leaf is longer than *Barosma serratifolia* leaf
- c- They have epidermal cells with mucilage & digoxin
- d- They are used as diuretic

38- Which of the following is used as urinary antiseptic:

- a- Uva ursi
- b- *Vinca rosea*
- c- Buchu
- d- Both a & c

39- Which of the following is used as sedative

- a- Hyoscine
- b- Cherry laurel leaves
- c- Scillaren A
- d- both a & b

40- *Vinca rosea* plant:

- a- Belongs to family Labiateae
- b- Contains anticancer alkaloids
- c- Leaves and flowers are used medicinally
- d- It has sedative effect

41- Floral leaves are:

- a- Scale leaves of bulbs
- b- Sepals and petals
- c- Cotyledonous leaves
- d- Foliage leaves

- 42- We could identify the closely related types of leaves by:
- Number of calcium oxalate crystals
 - Palisade ratio
 - Number of epidermal cells
 - Both b & c
- 43- Asymmetric lamina base is found in
- Leaf with cuneate base
 - Leaf with oblique base
 - Both b and d
 - Stramonium leaf
- 44- Epidermal cells in leaves may contain:
- Mucilage as in senna and buchu
 - Diosmin flavonoid as in boldo
 - Cocaine alkaloid as in jaborandi
 - All of the above
- 45- All of the following about rosemary and mentha leaves is true except:
- Are used as carminative and aromatic stimulant
 - Contain anthraquinone glycosides
 - Belong to family Lamiaceae
 - Contain volatile oil
- 46- Tannins are present as the main constituent in:
- Henna
 - Hamamelis
 - Vinca rosea
 - Henbane
- 47- Powder of digitalis is characterized by:
- Glandular branched trichome
 - Oil cells contain volatile oil
 - Glandular trichome of unicellular stalk and bicellular head
 - Non glandular unicellular unbranched warty trichome
- 48- All the following about cardiac glycosides of digitalis is true except:
- Digoxin is the secondary glycoside of purpurea glycosides
 - Primary glycosides are hydrolyzed by acid to secondary glycoside
 - Digitoxin is hydrolyzed into digitoxigenin and digitoxose sugar
 - They are used as cardiotonic and diuretic
- 49- Pericyclic cells may be:
- Formed of fibers as an arc under and above the stele as in senna
 - Formed of continuous ring of fibers around the stele as in hamamelis
 - Formed of collenchyma under the stele as in digitalis
 - All of the above

50- Which of the following is true:

- a- Sennosides are hydrolyzed by acid to sennidin & galactose
- b- Caffeine has a CNS stimulant effect
- c- Keller kiliani's test is a special test for compounds with lactone ring
- d- Squill leaves contain cardenolides

The Answer Sheet

NO.	a	b	c	d	NO.	a	b	c	d
1					26				
2					27				
3					28				
4					29				
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Good Luck