
	TANTA UNIVERSITY FACULTY OF PHARMACY DEPARTMENT OF PHARMACOGNOSY				
	FINAL EXAM FOR PREPHARMACY STUDENTS				
COURSE TITLE:		<b>Medicinal plants</b>		COURSE CODE:1135	
DATE:	6/6/2017	TERM: SECOND	TOTAL ASSESSMENT MARKS: 150		TIME ALLOWED: 2 HOURS

**PART I****Introduction of flower - Herbs- Active constituents.....(75 marks, 60 minutes)**

You are Provided with 50 multiple choice questions, select the best answer and fill in the spaces inside the answer sheet below.

**Answer Sheet**

No	A	B	C	D	E	No	A	B	C	D	E
1						26					
2						27					
3						28					
4						29					
5						30					
6						31					
7						32					
8						33					
9						34					
10						35					
11						36					
12						37					
13						38					
14						39					
15						40					
16						41					
17						42					
18						43					
19						44					
20						45					
21						46					
22						47					
23						48					
24						49					
25						50					

1- In Dicotyledons, the number of segments in each whorl frequently is:

- A- Trimerous  
C- Tetramerous

D- Dimerous

- B- Pentamerous  
E- Both A and B

2- When all the flower segments are irregularly arranged and not alike the flower is:

- A- Zygomorphic  
C- Both A and B

D- Asymmetric

- B- Present in Papilionoidae  
E- Actinomorphic

3- Pistillate flower is:

- A- Possessing only the female organs  
C- Monoecious

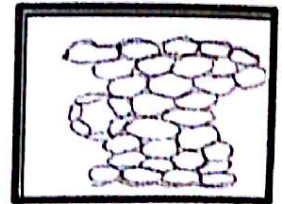
D- All of them

- B- Possessing only the male organs  
E- Monoclinous

4- The opposite cellular structure represents:

- A- Epidermis  
C- T.S in the calyx  
E- None of them

- B- Reduced mesophyll  
D- T.S in the corolla

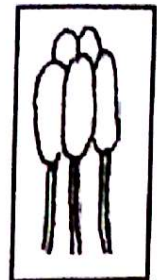


5- The opposite structure is:

- A- Monadelphous  
C- Polyadelphous

- B- Syngenesious  
D- Monandrous

E- None of them



6- The followings are true for pollen grain except:

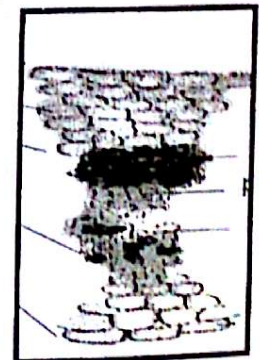
- A- Has an important value for the identification of drugs  
B- Is a fine powder that liberated on the dehiscence of the anther  
C- It possesses a wall of 2 layers  
D- Large particle varying in size

E- Has different shapes

7- The opposite structure is:

- A- T.S in ovary  
C- T.S in Style  
E- None of them

- B- T.S in sepals  
D- T.S in stigma



8- When both racemose and cymose branching occur in the same inflorescence, this is called:

- A- Polychasium  
C- Compound inflorescence  
E- None of them

- B- Dichasium  
D- Mixed inflorescence

9- Floral out growths include one or more of the following:

- A- Corona  
C- Both A and B

D- Perianth

- B- Nectaries  
E- All of them

10- An inflorescence, characterized by sympodial branching, where the oldest flower being at the center and the youngest near the base:

- A- Racemose  
C- Scorpioid cyme

- B- Dichasium  
D- Cymose umbel

E- Cymose



11- Diadelphous stamen occurs in:

- A- Malvaceae  
C- Glycyrrhiza  
D- Citrus  
B- Compositae  
E- None of them

12- Secondary compounds of active constituents may include all of the following except:

- A- Alkaloids  
C- Volatile oils  
E- Glycosides  
B- Carbohydrates  
D- Bitter principles

13- The following active constituents do not consists of glyceryl ester of fatty acids:

- A- Resins  
C- Fixed oils  
D- Lipids  
B- Volatile oils  
E- Both A and B

14- The following drugs containing volatile oils

- A- Peppermint  
D- Senna  
B- Clove  
C- Belladonna  
E- Both A and B

15- Volatile oils could be used as

- A- Carminatives  
C- Cardiotonic  
D- Hoemolytic  
B- Laxative  
E- Both A and B

16- .....are non reducing substances which on hydrolysis yield one or more sugars and non sugar part.

- A- Carbohydrate  
C- Glycosides  
D- Both B and C  
B- Resins and resin combinations  
E- All of them

17- Cardiac glycosides are:

- A- Occurs in *Digitalis purpurea*  
C- Cardiotonic  
D- Occurs in squill  
B- Have a steroidal nucleus  
E- All of them

18- ..... have laxative effect

- A- Anthraquinineglycosides  
C- Phenolic glycosides  
D- Thioglycosides  
B- Cardiac glycosides  
E- Both A and D

19- .....on hydrolysis yields HCN.

- A- Amygdalin  
C- Both A and B  
D- Thioglycosides  
B- Cyanogenic glycosides  
E- All of them

20- .....on hydrolysis give organic isothiocyanate which is irritating agent.

- A- Sinigrin  
C- Thioglycosides  
D- Both A and C  
B- Cyanogenic glycosides  
E- All of them

21- Salicin and arbutin are:

- A- Phenol glycoside  
C- Both A and B  
D- Flavone glycosides  
B- Give blue color with  $\text{FeCl}_3$   
E- Very common in *Cruciferae*

- 22- ....constitute the many shades of violet, mauve, blue and red colors of flowers.  
A- Anthocyanins  
C- Flavanols  
D- Flavone glycosides  
B- Flavans  
E- All of them
- 23- The following are true for saponin glycosides except:  
A- lower the surface tension  
C- Give permanent froth upon shaking  
D- They give a red color with KOH solution and other alkali  
E- Classified into steroids and triterpenoid  
B- Some hemolyze red blood cells
- 24-..... are used as a starting material for the manufacture of steroid hormones  
A- Steroidal saponins  
C- Diosgenin  
D-TriterpenoidSaponins  
B- Cardiac glycoside  
E- Both A and C
- 25- Glycoalkaloids are abundant in family:  
A- Solanaceae  
C- Both A and B  
D- Rosaceae  
B- Liliaceae  
E- Papaveraceae
- 26-.... are basic nitrogenous compounds of plants origin and have physiological effect.  
A- Cyanogenic glycosides  
C- Antibiotic glycosides  
D- All of them  
B- Alkaloids  
E- None of them
- 27- The following are true for plastid pigments (e.g Chlorophylls) except:  
A- Responsible for the green color of plants  
B- Occur in the chloroplasts  
C- Extended conjugated double bond system  
D- Complex Mg tetrapyrrolamethane compounds  
E- Water soluble
- 28- Lycopene is:  
A- Occurs in Tomato  
C- Give – ve results with Sb Cl<sub>3</sub>/CHCl<sub>3</sub> test  
D- Occurs in Orange  
B- Carotenoids  
E- Both A and B
- 29- The following test (s) is(are) positive for carotens:  
A- Blue color with Sb Cl<sub>3</sub>/CHCl<sub>3</sub>  
B- Conc. HCl containing little phenol gives dark blue color  
C- Conc. H<sub>2</sub>SO<sub>4</sub> gives green to dark blue to violet color  
D- Both A and B  
E- All of them
- 30- The following are true for Alkaloids except:  
A- Complex structure with the nitrogen atom  
C-Give + results with Wagners Reagent  
D- Give + results with Dragendorff's Reagent  
E- Widely distributed in family *Rosaceae* and *Labiatae*.  
B- Most of them are crystalline solids



31- ..... is (are) example (s) of liquid alkaloids which devoid of O<sub>2</sub>

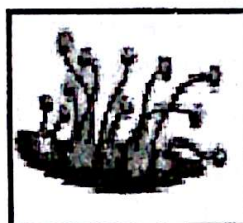
- A- Emetine  
D- Both B and C  
B- Coniine  
C- Nicotine  
E- Colchicine

32- ..... has oxytocic effect

- A- Ergometrine  
C- Ephedrine  
D- Coumarin  
B- Ergotamine  
E- Both a and b

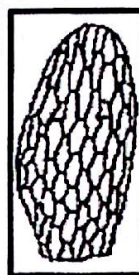
33- The opposite figure is

- A- Sclerotium  
C- Perithecium  
E- None of them  
B- Sphacillia  
D- Stromata



34- The opposite element is:

- A- Seed coat  
C- Stone cells of the pericarp  
E- Xylem parenchyma  
B- Lignified epidermal cells  
D- Covering trichome



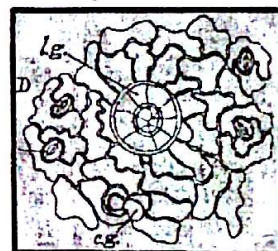
35- The following are true for Lobelia herb except:

- A- Contains alkaloids  
C- Expectorant  
B- Used in asthma and chronic bronchitis  
D- Belongs to family Labiatae.

E- Diaphoretic.

36- The opposite figure is:

- A- Key element of *Mentha piperita*  
B- Diacytic stomata  
D- Both B and C  
C- Labiatae hair  
E- All of them

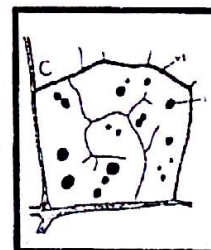


37-..... herb conations mainly volatile oils and used as carminative and aromatic stimulant.

- A- Lobelia  
D- Egyptian Henbane  
B- Ergot  
C- Mentha  
E- None of them

38- The opposite element is characteristic for:

- A- Stramonium  
C- Henbane  
B- Ergot  
D- Mentha  
E- None of them



39- Succulent berry is the type of fruit of

- A- Belladonna  
C- Both A and B  
B- Stramonium  
D- Egyptian Henbane  
E- All of them

40- ..... are anticholinergic herbs except

- A- Cannabis  
C- Belladonna  
B- Henbane  
D- Stramonium  
E- Egyptian Henbane

41- .....contains mainly tropane alkaloid.

- A- Ergot  
C- Ephedra  
B- Belladonna  
D- Stramonium  
E- Both B and D

42- ..... is used to relieve asthma and hay fever.

- A- Ephedrine                      B- *Ephedra sinica*  
C- Both A and B                  D- Broom Tops                      E- Both B and D

43- The following are true for the dried aerial part of *Medicago sativa*, Fam. *Legminosae* except:

- A- Contains vitamins A & E                      B- Used as a food for cattle and horses  
C- The powder is used as a diluents              D- Raises the blood pressure  
E- Called Alfalfa

44- The living annelid worms of *Hirudo medicinalis*, Fam. *Hirudinidae* is:

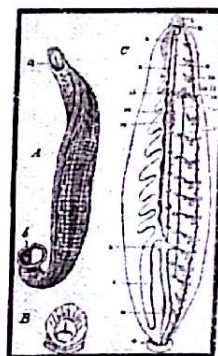
- A- Reduce the inflammation                      B- Treat thrombosis  
C- Both A and B                      D- Rubefacient and vesicant              E- All of them

45- Cochineal is used as:

- A- Coloring matter  
B- Irritant poison  
C- Food for cattle and horses  
D- Both A and B  
E- Both B and C

46- The opposite drug is:

- A- Broom Tops  
B- Alfalfa  
C- Cochineal                      D- Leeches                      E- Cantharides

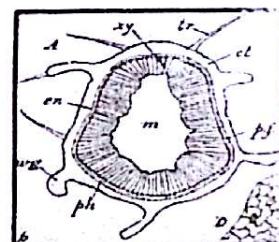


47- The cell wall of ergot sclerotium composed of:

- A- Cellulose                      B- Chitosan  
C- Chitin                      D- Both A and C                      E- None of them

48- The opposite figure is:

- A- Key element of Menthapowder  
C- T.S in Lobelia stem  
E- None of them  
B- T.S in Mentha stem  
D- Key element of Henbane



49- The following drugs contain resins except:

- A- Aloe                      B- Colophony  
C- Ammoniacum              D- Guaicum                      E- Jalap

50- Condensed tannins occur in many drugs as:

- A- Tea                      B- Cinchona  
C- Pomegranate              D- Galls                      E- Both A and B



**PART II, Flowers, Bark, Wood and Galls.....(75 marks, 60 minutes.**

From the answer list (1-95), match the best answers for the provided questions (100- 168) and record your answer NUMBER in TABLE 1 (PAGE 10), Answers may be used more than once.

**SENTENCES**

- 100- A patient suffering from spasm, bronchitis, flu and hypertension can be best treated by ..... inflorescence.
- 101- A pregnant woman suffering from stress and abdominal spasm may be treated by .....a..... flowers or .....b..... flower heads with caution.
- 102- The dried strobile of ..... cannot be used with paracetamol.
- 103- The volatile oil of the plant described in sentence 102 .....a ....., while its bitter taste is due to .....b.....
- 104- Feverfew inhibits the release of ..... and thus prevents headache attacks.
- 105- A sesquiterpene lactone present in Feverfew .....
- 106- A 15 years old hypertensive person with heart arrhythmia can be treated by .....
- 107- ..... Can improve immunity although it does not have vitamin C.
- 108- Hibiscus has acidic taste due to its content of .....
- 109- A pregnant obese woman suffering depression can be treated by .....
- 110- Blood purifying female tonic compounds are .....
- 111- A female suffering from irregular periods can use ..... to stimulate menstruation.
- 112- Obsessive compulsive disorder can be improved by using .....
- 113- A diabetic old man with Alzheimer's disease can use Memoraïd® which contains ..... extract.
- 114- A class of volatile oils that are sedative, spasmolytic, antibacterial, used for alopecia and isolated from *Lavendula officinalis* .....
- 115- The stigmas and styles of .....a ..... can be used as antispasmodic while stigmas and styles of .....b..... can be used to treat oedema.

- 116- Anti-inflammatory effect of mullein is due to its content of .....
- 117- Bitter taste of *Crocus sativa* is due to .....
- 118- Obese hypertensive patient with frequent flu symptoms can drink ..... to improve all these disorders.
- 119- ..... cream heals wounds by promoting cell repair and antiseptic effect.
- 120- Wounds of hypertensive people can be best treated by .....
- 121- Arnica gel contains volatile oil ..... a... and sesquiterpene lactone ...b.....
- 122- Red poppy petals, red rose petals and hibiscus contain .....
- 123- Layers of cells in the center of the T.S of hypanthium region of clove flower buds is named .....
- 124- A member of family Myrtaceae is named .....
- 125- Pollen grains in clove are .....
- 126- One of other clove products that shows much starch and less eugenol is .....
- 127- Type of inflorescence in clove is .....
- 128- Exine of pollen grains in arnica is.....
- 129- Receptacle in German chamomile is .....
- 130- ..... chamomile was used to treat malaria chills.
- 131- ColiMil is used to treat .....
- 132- German chamomile cannot be used with contraceptive drugs as it might act as .....
- 133- Species of insect flower is .....
- 134- Colorless, odorless substance from clove is named .....
- 135- Johnson's baby soap contains .....
- 136- The species of yarrow is .....
- 137- Wormseed toxicity is due to .....
- 138- The species of marigold is .....
- 139- The volatile oil in saffron is .....
- 140- ..... can be used for treatment of bruises but not safe for pregnant women.
- 141- Safflower color is due to presence of .....
- 142- The main volatile oil compound present in sage is named .....
- 143- A specific saffron product with celery and anise extracts is used for treatment of .....
- 144- The species of red rose petals is named .....
- 145- The type of tannins in clove is .....
- 146- Red clover should be avoided in ..... people.
- 147- A phloroglucinol derivative in St John's wart is named .....
- 148- Alternate layers of dead cork and other collapsed dead tissues present in the surface of the bark are .....
- 149- Lower plant, present in the stem bark and consists of slender stems to which small leaves are attached in one plane is .....
- 150- Transverse large parallel wrinkles due to longitudinal shrinkage of the bark are .....
- 151- External markings arise in the outer surface of the bark due to the lack of elasticity in the dead tissues and the continuous increase in growth of the tree .....
- 152- ..... replace stomata in the bark for gaseous exchange.



- 153- All these barks are used as inner bark ...a ....., ...b,....
- 154- The powder of .....a... is characterised by absence of cork cells while ...b..... is used as middle and inner bark.
- 155- ..... is a method of bark collection in which the tree is cut a short distance from the ground.
- 156- Quillaia has a ... fracture in which the bark breaks into tangentially arranged layers.
- 157- Cork, phellogen and phelloderm compose the .....
- 158- ..... secondary thickening is defined as the secondary growth that occurs within the stele by the activity of the cambium.
- 159- Cinchona ..... bark contains fusiform forked fibers.
- 160- ..... is an alkaloid from cinchona that is used as an antimalarial.
- 161- The alkaloid described in sentence 160 causes an ..... of phenobarbital concentration in the blood when taken together.
- 162- ..... bark contains phenyl propanoid derivative that helps in treating ulcers.
- 163- ..... bark contains O- and C'-anthraquinone glycosides.
- 164- ..... bark when burned, it emits somewhat musk-like odor.
- 165- Willow bark is used as analgesic due to its content of .....
- 166- ..... wood can be used as an enema to expel worms.
- 167- ..... wood is used as diuretic and stimulant.
- 168- ..... bark can be used as an agreeable laxative.

#### ANSWER LIST

- |                           |                            |                   |                                 |
|---------------------------|----------------------------|-------------------|---------------------------------|
| 1- Cascarilla             | 2- <i>Sambucus nigra</i> , | 3- Organic acids, | 4- Lavander,                    |
| 5- Saffron                | 6- Hops                    | 7- Tilia          | 8- chamomile                    |
| 9- Humulene               | 10- Parthenolide           | 11- Humulone      | 12- Monoterpenes                |
| 13- Yarrow                | 14- Zea mays               | 15- Lenticles     | 16- Prostaglandins              |
| 17- Quassia               | 18- Deal                   | 19- Canella       | 20- <i>Tanacetum parthenium</i> |
| 21- Rhytidome             | 22- Cinnamon               | 23- Cassia        | 24- Carthamin                   |
| 25- Laminated             | 26- Increase               | 27- Decrease      | 28- <i>Hypericum perforatum</i> |
| 29- Hibiscus              | 30- calendula              | 31- Arnica        | 32- <i>Crataegus laevigata</i>  |
| 33- Furrows               | 34- Cinnamon               | 35- Coppicing     | 36- Filling                     |
| 37- Quinine               | 38- Quinidine              | 39- Anthocyanin   | 40- Iridoid glycosides          |
| 41- Cracks                | 42- Crocin                 | 43- Picrocrocin   | 44- Phytoestrogens              |
| 45- Intra-stellar         | 46- Extra-stellar          | 47- Periderm      | 48- Phellem                     |
| 49- Aspirin               | 50- Salicin                | 51- Sage          | 52- Quillaia                    |
| 53- Thymol                | 54- Cascara                | 55- Stem          | 56- Root                        |
| 57- Helenalin             | 58- Bisabolol              | 59- Liverwarts    | 60- Collumella                  |
| 61- Aerenchyma            | 62- Clove                  | 63- German        | 64- Roman                       |
| 65- <i>officinalis</i>    | 66- <i>cina</i>            | 67- santonin      | 68- Safran                      |
| 69- Spiny                 | 70- Smooth                 | 71- Triangular    | 72- Mother clove                |
| 73- Exhausted             | 74- Hollow                 | 75- Solid         | 76- <i>gallica</i>              |
| 77- Catechol              | 78- Pyrogallol             | 79- Colic         | 80- Estrogen                    |
| 81- Simple raceme         | 82- Compound raceme        | 83- Caryophyllene | 84- <i>millefolium</i>          |
| 85- <i>cinerarifolium</i> | 86- A-thujon               | 87- Yarrow        | 88- Hemophilic                  |
| 89- Menstrual discomfort  |                            | 90- Compositae    | 91- Labiatae                    |
| 92- Hyperforin            | 93- Carvacrol              | 94- Frangula      | 95- Eugenol                     |

TABLE 1

<u>SENTENCE</u>	<u>ANSWER NUMBER</u>	<u>SENTENCE</u>	<u>ANSWER NUMBER</u>
100		133	
101 a		134	
101 b		135	
102		136	
103 a		137	
103 b		138	
104		139	
105		140	
106		141	
107		142	
108		143	
109		144	
110		145	
111		146	
112		147	
113		148	
114		149	
115 a		150	
115 b		151	
116		152	
117		153 a	
118		153 b	
119		154 a	
120		154 b	
121 a		155	
121 b		156	
122		157	
123		158	
124		159	
125		160	
126		161	
127		162	
128		163	
129		164	
130		165	
131		166	
132		167	
		168	