



TERM EXAMINATION FOR FIRST YEAR STUDENTS				
COURSE TITLE:		Pharmacognosy		COURSE CODE:
DATE:	15/01/2013	TERM: FIRST	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS

- **PART ONE (NATURAL PRODUCTS, FLOWERS AND HERBS) 60 Marks:** includes questions I, II and III. Answers outside the specific places will be ignored.
- **Question I (40 marks, 2 marks for each point):** You are provided with (20) sentences describing one plant or natural product. Write your answer in Table (A).
 - 1- The part used of this flower is the calyx & epicalyx.
 - 2- A flower used for treatment of bruises.
 - 3- An adulterant for saffron and contains biseriate multicellular non-glandular hairs.
 - 4- A flower named insect flower.
 - 5- A herb is considered as a source for nasal decongestant alkaloid.
 - 6- Florets from family compositae containing red coloring matter and oil production.
 - 7- Key element of this flower is triangular pollen grains and its active constituent is volatile oil (mainly eugenol).
 - 8- Produces HCN upon hydrolysis and tested by Guignard's test.
 - 9- A flower rich in bisabolol and has a single whorl of ray florets.
 - 10- Herb used in treatment of asthma and also as smoking deterrent.
 - 11- Laxative glycosides and tested by Borntrager's test.
 - 12- The part used for this herb is the dried female flower.
 - 13- Amphoteric natural products that compose different colors of the plant organs.
 - 14- A flower named wormseed.
 - 15- Unsaturated conjugated hydrocarbons class of natural products that give blue color with $\text{SbCl}_3/\text{CHCl}_3$.
 - 16- A herb does not have cardiac glycosides but shows cardiotonic and diuretic effects.
 - 17- Flowers containing non-steroidal phytoestrogens.
 - 18- A flower from family labiata used in perfume industry.
 - 19- A flower used as expectorant and contains mucilage, flavonoid glycosides and volatile oils.
 - 20- Resting stage of ergot.

Item No.	Answer	Item No.	Answer
1	Hibiscus (karkadeh)	11	Anthraquinone glycosides
2	Arnica	12	Cannabis (Indian hemp)
3	Calendula Marigold	13	Anthocyanins
4	Pyrethrum	14	Santonica
5	Ephedra	15	Carotenoids (carotenes)
6	Safflower	16	Broom tops
7	Clove	17	Red clover
8	Cyanogenic glycosides	18	Lavender
9	German chamomile	19	Tilia (lime flower)
10	Lobelia (Indian tobacco)	20	Sclerotium

Question II (10 marks, 2 marks for each point): Answer the following as required.

1- A person with tooth pain used entire clove buds for decreasing the pain but the pain was not affected at all. The possible reason is that the buds he used are **exhausted**

2- A woman on contraceptive pills was using a prescription containing German chamomile for relieving her stomach upset. Should she continue on both medications at the same time? and why?
No, because German chamomile has estrogenic like effects and thus will affect the action of the contraceptive pills which control the hormones.

3- A person has prescribed santonica to expel worms to an epileptic person. Do you expect the frequency of convulsions to increase or decrease? and why?

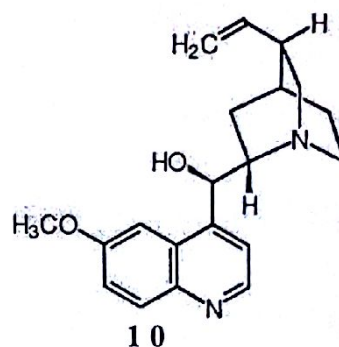
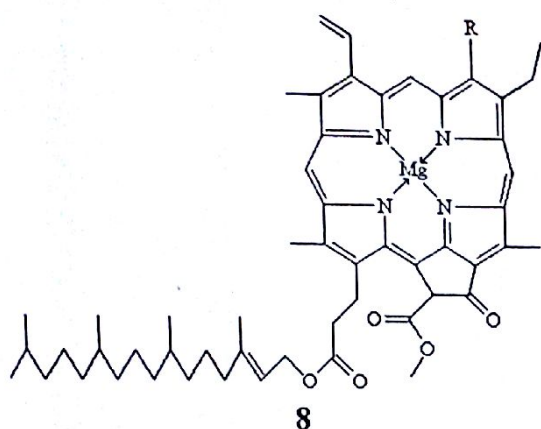
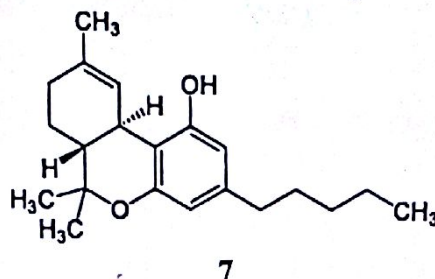
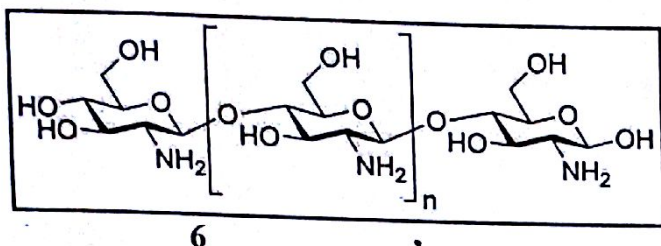
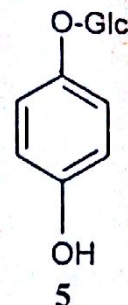
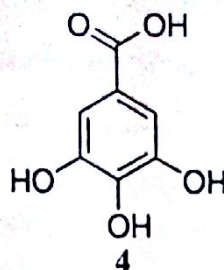
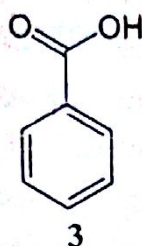
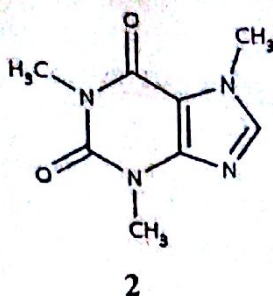
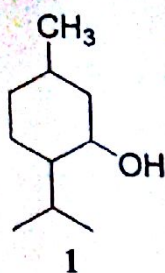
Increase, because santonica causes convulsions as side effects.

4- You have given two samples one is khellin and the other is xanthotoxin but you lost the labels. Mention one chemical substance can be used to give you a clue.

KOH

5- An extract of a plant rich in tannins was heated with HCl and gave red insoluble substance. The expected type of tannin in that plant is **condensed**.

Question III (10 marks, 1 mark for each point): Identify the class of the following compounds by choosing from the list of answers below and fill in Table (B).



Answer list: a- alkaloid b- chlorophyll pigments c- polysaccharide
d- dianthrone e- cannabinoid f- volatile oil g- anthraquinone
h- phenolic glycoside i- balsamic acid j- tannin hydrolysis product
k- disaccharide L- carotenoids m- bitter principle

Table (B) إذا كتب الطالب الحرف فقط تحسب الدرجة كاملة, إذا كتب اسم المركب فقط تحسب الدرجة كاملة أيضا

Compound No.	Answer letter	Compound No.	Answer letter
1	F (menthol)	6	C (chitin)
2	A (caffeine)	7	E (THC, tetrahydrocannabinol)
3	I (benzoic acid)	8	B
4	J (gallic acid)	9	D
5	H (arbutin)	10	M (bitter principle)

EXAMINER DR. AMANY ELSAYED RAGAB

Part one ends here. Continue on Part II of the exam

Part II

Question No. IV (60 points, in 30 minutes).

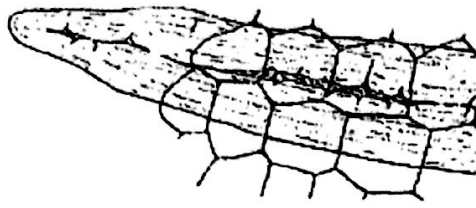
Justify the following statements by true (T) or false (F), correct the false statements with one word, while for the true ones only choose a suitable figure's letter numbered from A to J. Put your answers in the table No. I.

1. Buchu leaves has a secondary diuretic effect as it contain cardiac glycoside.
2. Rosemary leaves is a member of family *Labiatae*
3. Powdered Quassia wood showing fragment of lignified fibers surrounded by crystal sheath.
4. Dried leaves of the Squill used mainly as an expectorant and its powder contains cluster of Ca.Ox.
5. Powdered Cinchona bark gives positive test with Mayer's reagent.
6. Galls are pathological outgrowths that gives positive with modified Borntrager's test.
7. Solanaceous leaves are charachtarized by flattened reniform seeds.
8. Coca leaves contain tannins and administrated hypodermically as local 'anesthesia.
9. Soap bark was used for washing silk as it contains saponin.
10. Guafa leaves contain caffains and used as expectorant
11. Henna leaves used in hair preparations as it contains methyl salicylate.
12. Frangula and cassia bark are the allied drugs of cascara bark.
13. Powdered Hyoscymous muticus similar to that of Hyoscymous niger , but contains branched hair.
14. Althea bark used as a poultice.
15. Cherry- laurel leaf contain cyanogenetic glycoside, which is positively tested by FeCl_3 .
16. Senna is a simple leaf with an isobilateral continuous mesophyel.

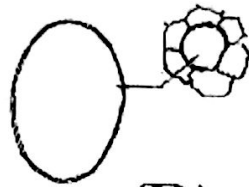
17. Digitalis leaves meristele is surrounded by the endodermis containing starch granules.
18. Stramonium leaves positively tested by Keller's test.
19. Catharanthus leaves contains ergometrine indol alkaloids .
20. Belladonna is the allied drug of Canella bark.

Table I

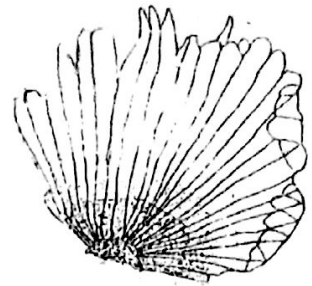
Statement No.	Correction	Statement No.	Correction
T or F	Figure's litter	T or F	Figure's litter
1. F	Digitalis	11. F	Lawson
2. T	D	12. F	no cassia
3. F	senna / cascarra	13. T	I
4. F	raphides	14. F	leaves
5. T	A	15. F	Gignered paper
6. F	FeCl ₃ / Tannin	16. F	Compound leaf
7. F	Solanaceous herb	17. T	J
8. F	alkaloid	18. F	Mayer's reagent
9. T	F	19. F	vinblastine and vincristine
10. F	Tea	20. F	Cinnamon / cassia



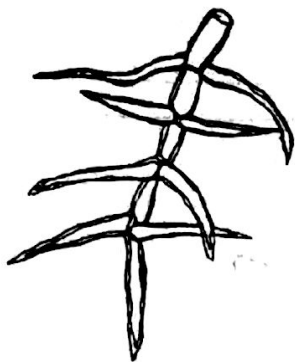
(A)



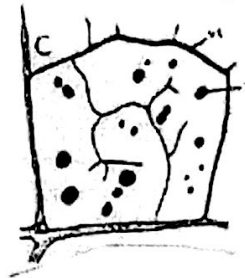
(B)



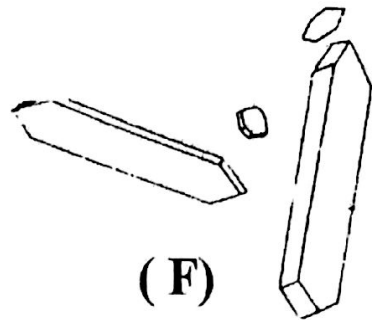
(C)



(D)



(E)



(F)



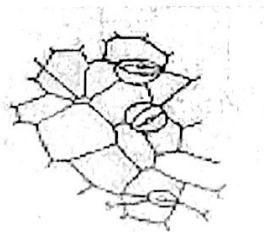
(H)



(G)



(I)



(J)

Question No. IV (30 points, in 20 minutes).

Choose the odd statement according to the scientific term between practices. Put your answers in the table No. II

1. Galls- Tea leafs- Digitalis leafs (active constituent)
2. Cascara bark – Cinchona bark – Cascarilla bark (root bark).
3. Cinnamon bark- Cassia bark- Canella bark (react negatively with FeCl_3)
4. Purpurea glycoside A- Purpurea glycoside B – digitoxin (2ry glycoside).
5. Senna leaves- Mentha leaves- Rosmary leaves (hair type).
6. Quillaia bark- Frangula bark- Deal (part used).
7. Coca leaves- Eucalyptus leaves- Wintergreen leaves (non-topical use).
8. Cinchona bark- Catharanthus leaf- Guafa leaves(active constituents).
9. Quillaia bark- Senna leaves- Belladonna leaves (type of Ca. Ox.).
10. Belladonna herb- Hyoscyamus herb- stramonium herb (plant type).
11. Yellow Cinchona- Henna leaves- red Cinchona (Family).
12. Buchu leaves- Cinnamon bark- Quillaia bark (used as emulsifying agent).
13. Cinnamon bark- Canella bark- Cassia bark (powder contains cork cells).
14. Cascara bark-Senna leaves- Belladonna leaves (type of Ca. Ox.).
15. Digitalis lanata leaves- Cherry laurel leaves- Frangula bark (used As sedative).
16. Sramonium leaves- Hyoscyamus niger leaves- Hyoscyamus muticus leaves (lamina type).
17. Althea leaves- Cinnamon bark- Cascarella bark (has no mucilage).s
18. Cascara bark- Senna leaves- Frangula bark (react negatively with Modified Borntrager's test).
19. Jaborandi leaves- Belladonna leaves- Hyoscyamus herb (cholinergic effect).
20. Senna leaves- Cinnamon bark- Frangula bark (uses)

Table II

No.	the odd statement	No.	the odd statement
1.	Digitalis	11.	Henna
2.	Cinchona	12.	Quillaia
3.	canella	13.	Cassia
4.	digitoxin	14.	Belladonna
5.	senna	15.	cherry Laurel
6.	DeaL	16.	H. muticus
7.	Coca Leaves	17.	Cascarilla
8.	Guafa	18.	Frangula
9.	Quillaia	19.	Jaborandi
10.	Belladonna	20.	Cinnamon

Good luck