



2015/2016

		TANTA UNIVERSITY FACULTY OF PHARMACY DEPARTMENT OF PHARMACOGNOSY			
		FINAL EXAM FOR FIRST YEAR STUDENTS			
COURSE TITLE:		PHARMACOGNOSY 1		COURSE CODE: 1185 2065	
DATE: 17/1/2015	TERM: FIRST	TOTAL ASSESSMENT MARKS: 150		TIME ALLOWED: 2 HOURS	

Part I (Leaves, barks and wood...75 marks)

Choose only one answer which you consider correct and record your choice in the corresponding place in the answer sheet provided below.

Answer sheet

NO	A	B	C	D	E	NO	A	B	C	D	E	NO	A	B	C	D	E
1						18						35					
2						19						36					
3						20						37					
4						21						38					
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12						29						46					
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14						31						48					
15						32						49					
16						33						50					
17						34											

1- Partial hydrolysis of Lanatosides A gives

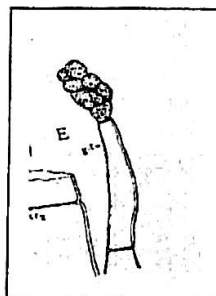
- a- Digitoxin b- Gitoxin c- Aglycon
 d- Purpurea glycosides A without glucose e- Both (a) and (c)

2- Residue of drug + conc. HNO_3 and evaporate then add alc. KOH this test is

- a- Kedde's test b- Vittal's test
 c- Specific for cardiac glycosides d- Gives violet color
 e- Both (b) and (d)

3- This is the key elements of

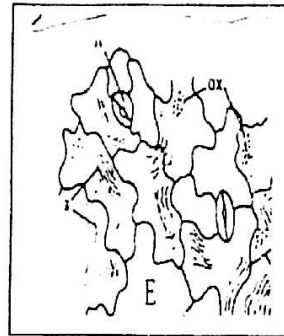
- a- Digitalis b- Hyoscyamus muticus
 c- Leaf has smooth muscle relaxant effect
 d- Stramonium leaf
 e- Both (b) and (c)



- 4- Mucilage
 - a- Give red color with ruthenium red
 - b- Present in Buchu
 - c- Present in epidermal cells of senna
 - d- Is the main constituent of althea leaves
 - e- All of the above
- 5- Regarding to Diosmin all of these are true except
 - a- Give red color with NH_4OH
 - b- Used in treatment of varicose veins
 - c- Present in the epidermis of buchu
 - d- present in rosemary leaves
 - e- Present in leaf used as hepatoprotective
- 6- Regarding to Uva ursi all of these are true except
 - a- Related to family Rutaceae
 - b- Gives with conc. $\text{HNO}_3 \rightarrow$ red or orange
 - c- More effective if taken with vegetable based diet
 - d- Have oxytotic effect
 - e- Contain Tannins
- 7- Digitalis powder dose is
 - a- 25 mg/day
 - b- 1 mg/day
 - c- 10 mg/day
 - d- 5mg/ day
 - e- None of the above
- 8- The glycoside form of some drugs are more used than the aglycon form e.g
 - a- Anthraquinones glycosides which are more absorbed than the aglycone so give high effect
 - b- Anthraquinones glycosides which are more soluble in water but not absorbed by the small intestine and this is required for its effect
 - c- Cardiac glycosides are more absorbed and more effective than the aglycones
 - d- Both (a) and (c)
 - e- Both (b) and (c)
- 9- Over dose of tropane alkaloids lead to
 - a- Yellow vision
 - b- Increase in the heart rate and cause hallucination
 - c- Abdominal pain
 - d- Increase the secretion of mucosal membrane
 - e- All of the above except (a)
- 10- Drug used to decrease gastric and pancreatic secretion
 - a- Mentha
 - b- Solanaceous leaves
 - c- Rosemary
 - d- Jaborandi
 - e- None of the above
- 11- Regarding to tea all of these are true except:
 - a- Green tea contain more catechins than black tea
 - b- Cured green tea contain more theaflavin
 - c- Theaflavins are responsible for the colour and the taste of black tea.
 - d- Contain theophelline which is diuretic
 - e- Green tea can used safely after meal
- 12- Senna leaves are contra indicated with all of the above except
 - a- IV. Ca salt
 - b- Digitalis leaves
 - c- Buchu leaves
 - d- Uva urse leaf
 - d- Deal wood
- 13- Idioblast of CaOX (microcrystals) is present in
 - a- Cinchona barks
 - b- Stramonium leaves
 - c- Cinnamon barks
 - d- Canella barks
 - d- None of the above
- 14- The leaf in this picture is/Has
 - a- Jaborandi
 - b- Eucalyptus
 - c- Digitalis lanata
 - d- Anticholinergic effect
 - e- Both (a) and (d)



- 15- Regarding to *Catharanthus* leaves all of these are true except:
 a- Is related to family apocyanaceae b- Used as antioxidant
 c- Contain indole alkaloids d- Treat lymphatic carcinoma
 e- Treat acute leukemia in children
- 16- Leaves used as sedative
 a- Belladonna b- Cherry laurel c- Guafa
 d- Coca e- Both (a) and (b)
- 17- Leaf used as diaphoretic
 a- Stramonium b- Jaborandy c- Boldo
 d- Rosemary e- None of the above
- 18- Henna leaves is used as anti-dandruff due to
 a- the presence of Lawson
 b- Antiseptic effect due to phenolic glycoside
 c- The presence of flavonoids
 d- Both (b) and (c) e- all of the above
- 19- This stomata
 a- present in plant used as laxative
 b- Present in plant related to family leguminosae
 c- Present in plant used as diuretic
 d- Characteristic to family solanaceae
 e- Both (a) and (b)
- 20- Rosemary leaves have these effects except:
 a- Hypoglycemic b- Anti ulcerogenic
 c- Hepato protective d- Antitumorigenic
 e- Antioxidant
- 21- lack of elasticity in the dead tissues of the bark, and the continuous increase in growth of the tree, lead to the formation of
 a- Furrows b- Cracks c- Lenticels
 d- Wrinkles e- Both (a) and (d)
- 22- Regarding to secondary growth occurs in the cortex by the activity of the cork cambium all of these are true except .
 a- Give surprised cells to outside b- secondary cortex to inside
 c- Is called extra-stellar secondary thickening d- Is called intra-stellar secondary thickening
 e- Gives parenchyma in both sides
- 23- Periderm in the bark is formed of
 a- Phellem and phelloderm and phellogen c- Cork and cortex
 b- Cork and cork cambium e- Non of the above
 d- Cork, cork cambium and primary cortex
- 24- The cinchona root bark is differentiated from stem bark by:
 a- The presence of epiphytes b- forked fiber
 c- Present as Curved and quills d- The absence of epiphytes
 e- Both (b) and (d)
- 25- Regarding to Canella Bark
 a- Is formed of inner bark b- Contain tannin
 c- Used as bitter tonic d- Is formed of whole bark
 e- Both (c) and (d)



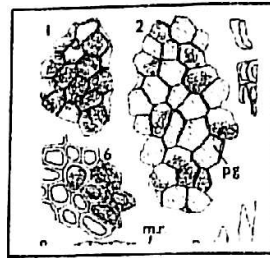
- 26-Regarding to Quillaia Bark all of these is true except:
 a- Related to family Rosaceae.
 b- Has strong sternutatory odor
 c-Styloids crystals of CaOX are the characteristic key elements of it
 d- Is formed of middle and inner bark
 e- It's color is pinkish-Buff
- 27- Cassia bark is used as anti-ulcer due to the presence of all of these constituents except :
 a- Phenyl propanoid derivative
 b- Cassioside
 c- Little amount of eugenol
 d-High amount of Cinnamic aldehyde
 e- High amount of mucilage and tannin
- 28- All of these barks are used as whole barks except:
 a- Cinchona
 b- Cassia
 c- Canilla
 d- Frangula
 e- Cascara
- 29- *Rhamnus purshiana* family Rhamnaceae is the part used of
 a- Cascara bark
 b- cassia bark
 c- Cascarilla bark
 d- Quassia wood
 e- Cherry laurel leaf
- 30- Br₂ Water and Dil. NH₄OH → Emerald green color with a blue florescence this test is
 a- Called Thaleioquin's test
 b- called Borntrager's test
 b-Give positive result with cinchona bark due to the presence of phlobaphenes
 c- Give positive result with cinchona alkaloids
 e- Both (a) and (c)
- 31- Regarding to Quinidine alkaloids all of these is true except:
 a-It is used for the treatment of Cardiac arrhythmias
 b- Not taken with digoxin
 c-It is used for the treatment of malaria
 d-Its Dose is 25mg/kg
 e- Both (c) and (d)
- 32- Loss of hearing, ringing in the ears and visual problems this the symptom of the over dose of
 a- Quinidine
 b- Quinine
 c- Atropine
 d- Uva urse
 e- Cardiac glycoside
- 33- Regarding to cinnamon bark all of these are true except
 a- Contain Eugenol
 b-Contain tannins and mucilage
 c-Used to facilitate weight gain
 d-Contraindicated in Stomach ulcers
 e- Monitor glycemia during treatment
- 34- The following bark powders are characterized by the absence of cork cells
 a- Cinnamon and cinchona
 b- Cascara and Cascarilla
 c- Cinnamon and Cassia
 d- Quillaia
 e- None of the above
- 35-Regarding to Jamaica wood all of these are true except:
 a- Has false annual rings
 b-Used as enema to expel threadworm
 c- Used as a flavoring agent
 d-Parasiticide for head and body lice
 e-Is diffuse porous wood

- 36- FeCl_3 gives positive results with
- a- Guaiacum due to the presence of guaiaconic acids
 - b- Cinchona due to the presence of phlobaphenes
 - c- Galls due to the presence of tannin
 - d- Uva urse due to arbutin
 - e- All of the above

- 37- *Pinus sylvestris* family pinaceae is:
- a- The Botanical origin of Guaiacum wood
 - b- Contain colophony
 - c- Used as diuretic
 - d- useful in chronic gout
 - e- Both (b) and (c)

- 38- Regarding to mosses
- a- are parasitic
 - b- could be found on cinchona root bark
 - c- Their leaves are arranged spirally
 - d- Their leaves show no midrib
 - e- Both (b) & (c)

- 39- This is the key elements of bark
- a- Used in dyspepsia
 - b- Contain alkaloids
 - c- When burned gives musk-like odor
 - d- Used as tonic and stimulant
 - e- All of the above



- 40- Upon examining of this bark microscopically it shows
- a- Lignified cork cells
 - b- Idioblasts of CaOx crystals
 - c- Lignified sclerides
 - d- Epiphytes
 - e- None of the above

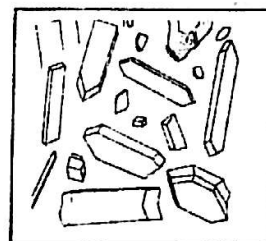
- 41- Br_2 Water and Dil. $\text{NH}_4\text{OH} \rightarrow$ Emerald green color with a blue fluorescence this test is
- a- Called Thaleioquin's test
 - b- called Borntrager's test
 - c- Give positive result with cinchona bark due to the presence of phlobaphenes
 - d- Give positive result with cinchona alkaloids
 - e- Both (a) and (c)

- 42- Regarding to Quinidine alkaloids all of these is true except:
- a- It is used for the treatment of Cardiac arrhythmias
 - b- Not taken with digoxin
 - c- It is used for the treatment of malaria
 - d- Its Dose is 25mg/kg
 - e- Both (c) and (d)



- 43- The opposite plant
- a- Is used for the manufacture of perfumes
 - b- Contains mainly saponins
 - c- Is used as non astringent bitter tonic
 - d- Both (b) & (c)
 - e- All of the above

- 44- This is the key element of
- a- Bark used as stimulant and expectorant
 - b- Has rhytidome
 - c- Its fracture is splintery and laminated
 - d- Is related to family Rosaceae.
 - e- All of the above



45-Regarding to Resin (colophony)

a- Is used as diuretic and stimulant

c- Is used in manufacture of paper and synthetic fibres

d- Present in Quassia wood

b- Present in guaiacum wood

e- Both (a) and (b)

46- Regarding to this picture, it is

a- Tangential longitudinal section

b- Transverse section for plant used as anthelmintic

d- None of the above

e-Both (a) and (b)

c- Radial section



47- For pernicious malaria attack

a- Quinine is used in dose 25mg/kg

b- Quinine SO₄ can be taken by slow infusion

c- Quinine is used in dose not more than 0.5gm/day

d- Quinidine is used in dose 0.7-1gm/day

e- None of the above

48- Plant used for treatment of chronic gout and rheumatism is;

a- Guaiacum

b- Deal wood

c- Cascarilla bark

d- Canella bark

e- None of the above

49- Regarding to cassia bark all of these are true except;

a- Has small amounts of tannin

b-Has anti-ulcer properties

b- Antiallergic effect Due to (diterpenes)

c-Contain mainly cinnamic aldehyde

e- It contain phenyl propanoid derivative

50- Due to the presence of..... , Cinchona bark is used to quit smoking

a- Quinine

b- quinidine

c- phlobaphenes

d- None of the above

GOOD LU

Part II (Flower, Herb & Active constituents):

Q II

(25 X 1.5= 37.5 point in 25 minutes)

You are provided with 25 sentences; in each one choose the odd word that coordinates with the corresponding mentioned parameter.

Please put your answers at the underline Table.

- | | |
|---|--|
| 1) Clove – Pyrethrum – Mentha | (gives -ve reaction with FeCL ₃) |
| 2) Ergometrine – crocin - Atropine | (kind of active constituents) |
| 3) Cannabis - Belladonna - Stramonium | (related Family) |
| 4) Ergot- Clove stalk- Papaver | (polysaccharide contents) |
| 5) Lavender- Saflower- Lavender | (adulterant of Saffron) |
| 6) Arnica- Lobelia- Papaver | (related to family <i>Papaveraceae</i>) |
| 7) Saflower- Mentha- Lavender | (contains labitea and knotty hair) |
| 8) Saffron- Calendula- Stramonium | (part used is the ligulate florets) |
| 9) Hyoscyamus - Senna herb - Lobelia | (gives +ve with Borntrager 's test) |
| 10) Chlorophylls A & B- Carotenoids- Anthacyanins | (soluble pigment) |
| 11) Red Rose – clove stalk - Mother clove | (not an adulterant of clove) |
| 12) Conine- Ergometrine- nicotine | (mice like odour) |
| 13) Mentha - Clove- Cannabis | (contains menthyl acetate and menthol) |
| 14) Calendula- Arnica- Laminaria | (use) |
| 15) Hyoscyamus leaf- Belladonna leaf – Santonica | (Anthelmentic drug) |
| 16) Senna – Mentha - Ergot | (gives -ve reaction with Mayer's) |
| 17) Pyrethrum- Arnica - Roman Chamomile | (Type of pollen grain) |
| 18) Digitoxin- chitin- nicotine | (gives +ve reaction with Keller's test) |
| 19) Lobelia- Mother clove- clove | (Type of secretory structure) |
| 20) Clove's ovary- Clove's hypanthium- Saflower (T.S. contain area of aerenchyma) | |
| 21) Focus- Belladonna – Cannabis | (part used is the entire herb) |
| 22) Hyoscyamus niger- Hyoscyamus muticus – Cannabis | (branched hair) |
| 23) Gallic acid- Hydrolysable tannins - Condensed tannins | (HCL hydrolysis) |
| 24) Oleoresins- Anthraquion glycoside- Quercetin aglycon | (Free type) |
| 25) Santonica- Pyrethrum- Cannabis | (pistillate Ray floret) |

Table

Statement	No.	The Odd word
1.		
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Q III

(37.5 point in 35 minutes)

You are provided with two groups (A and B) each contains of 15 sentences:

- 1- Match one sentence from Group A with a suitable one from Group B, which describe one plant or natural/synthetic product. (0.5 point for each)
- 2- Choose one suitable figure litter for all of the described items from the underline figures sheet. (1point for each)
- 3- Name all the described items for the matched sentences. (1point for each)
- 4- Put all your answers in the underline Table.

Group A:

- 1- Petals from family *Rosaceae* containing red coloring matter.
- 2- A drug produces froth on shaking its aqueous solution.
- 3- A flower related to family *Labiatae*.
- 4- A drug extracted from a herb and used in prophylaxis of migraine.
- 5- A flower contains pyrethrins I and II.
- 6- The part used of this flower is the stigma and top of the style.
- 7- An autotrophic Thallophyta used for preparation of algenic acid.
- 8- A kind of ligulate flower and used in healing of wounds and bruseses.
- 9- An adulterant of a flower bud related to family *Myrtaceae*.
- 10- A flower part used is the dried head of Arnica Montana, Family *Compositae*.
- 11- Natural products of astringent taste and used in tanning of leather.
- 12- Natural products give HCN gas by enzymatic hydrolysis.
- 13- Glycosides characterized by a steroidal aglycone.
- 14- A disc floret named wormseed.
- 15- Water insoluble pigment

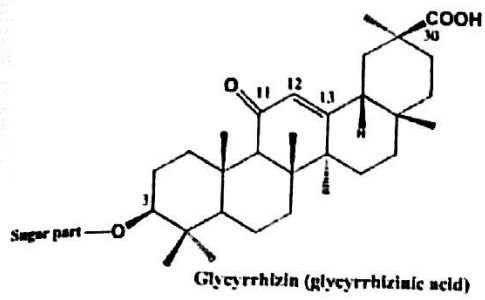
Group B:

- 16- An adulterant for drug, where its powder microscopically shows ligulate floret with 4 vains.
- 17- Its powder contains Knotty hairas.
- 18- Its rich in starch and less eugenol.
- 19- It contains brown pigment.
- 20- Gives blue-black color with FeCl_3 .
- 21- Natural products give precipitate with Dragendorff's reagent.
- 22- Its an unsaturated tetraterpenoid.
- 23- Contain calendulin and volatile oil.
- 24- A drug contains an o-type glucosidal linkage and a specific active group.
- 25- It's has an emulsifying action.
- 26- Reacts positively with Liebermann's test.
- 27- Its powder contains Twin hair and warty spiny pollen grain.
- 28- Its powder contains cottony hair.
- 29- Contains cyanin glycoside.
- 30- Gives deep blue color with Conc. H_2SO_4 .

Table

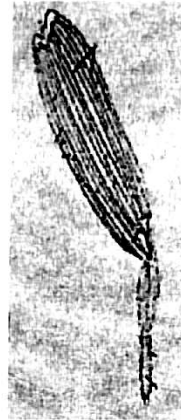
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Figures sheet



sapogenin

a



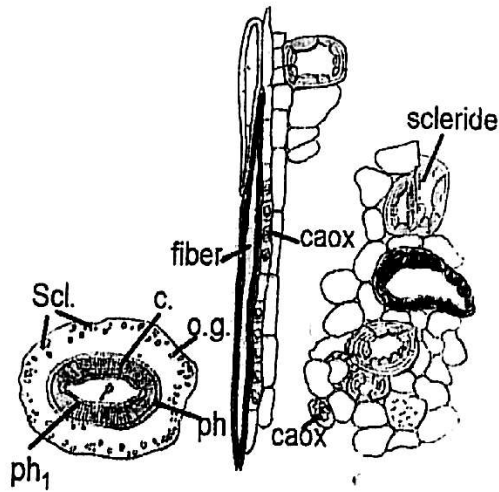
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c



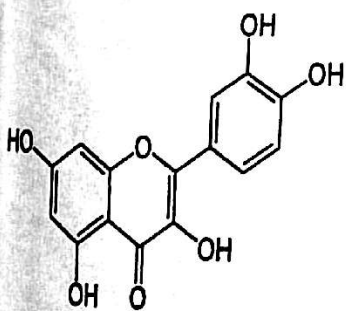
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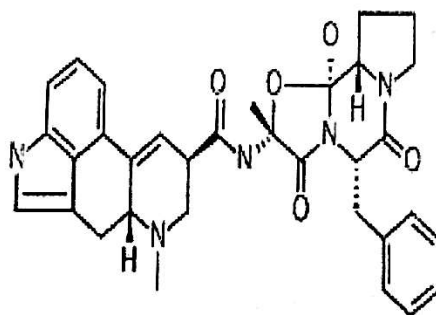
e



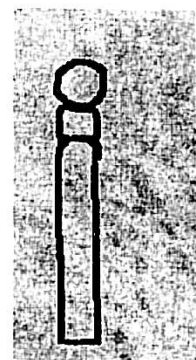
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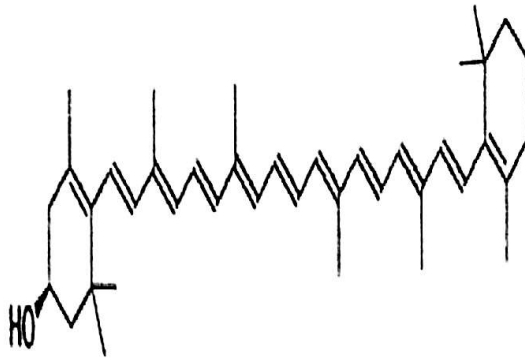
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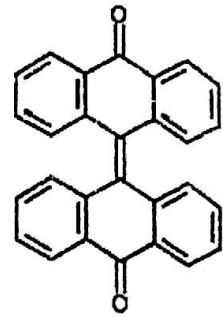
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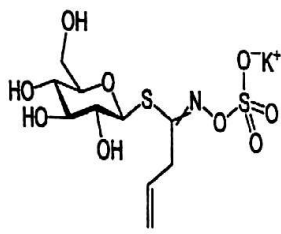
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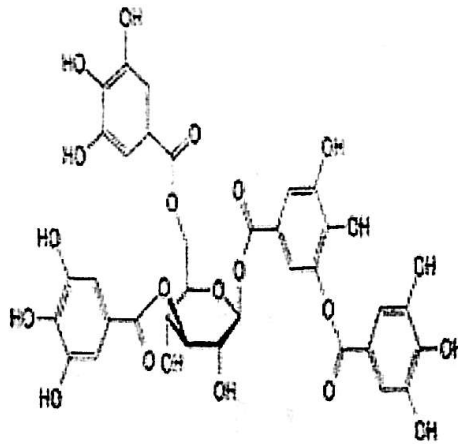
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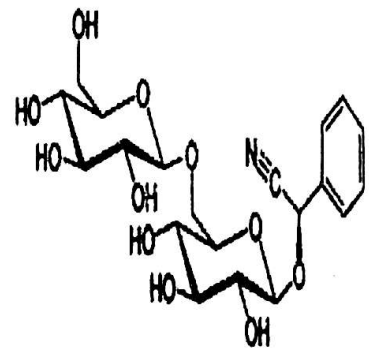
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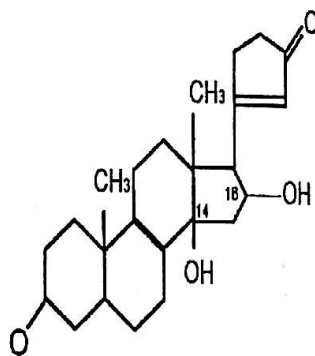
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o



p



q

(Digitoxose)₂ acetyl digitoxose, β D. glucose
(Digitoxose)₂ digitoxose, β D. glucose



r



s



t



u



v



w

Examiners:

- Dr. Kamillia Abo EL-seoud
- Dr. Ghada Ismail

Good luck