



PHILADELPHIA UNIVERSITY

Faculty of Pharmacy

Phytochemistry – First Exam / 1st Semester (2016-2017)

Lecturer: Dr. Yousef Abusamra

Name:

Student No.:

DATE: 13/11/2016

SECTION - الشعبة ()

TIME: 3:00 – 3:50 PM

- This exam is composed of **3** questions; multiple-choice, True & False and a matching.
- Number of pages including this one is **8 including quiz page.**
- Transfer all your answers on the answer sheet here.

I. Multiple-choice

Answer	A	B	C	D	E	Answer	A	B	C	D	E
Question						Question					
1						9					
2						10					
3						11					
4						12					
5						13					
6						14					
7						15					
8											

II. True / False:

1	2	3	4	5	6	7	8	9	10	11	12	13	14
T	T	T	T	T	T	T	T	T	T	T	T	T	T
F	F	F	F	F	F	F	F	F	F	F	F	F	F

III. Matching

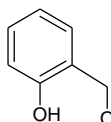
1	2	3	4	5	6	7	8	9	10	11	12

I. Multiple-choice question:

ANSWER THE FOLLOWING MULTIPLE-CHOICE QUESTIONS (1 - 15):
[1 mark each]

1. Which is a false statement among the followings?

- a) Vanillin is derived from shikimic acid through ferulic acid.
- b) Salicin is an O-hydroxypopulin glucoside.
- c) Helicin is an aldehyde glucoside.



- d) Oc1ccccc1CO is an aglycone from the willow bark.
- e) Coniferin is used in preparation of vanillin.

2. *Arctostaphylos uva-ursi* dried leaf is rich in:

- a) Avenin.
- b) Rutin.
- c) Sinigrin.
- d) Aescin.
- e) Arbutin.

3. A family known to be rich in glucosinolates is:

- a) Apiaceae.
- b) Rosaceae.
- c) Brassicaceae
- d) Rutaceae.

4. All the followings are false except:

- a) Amygdalin is commonly obtained from Cruciferae species.
- b) The glucose moiety in sinalbin is attached to the aglycone via a nitrogen atom.
- c) Sinalbin is less polar than sinigrin.
- d) Only cysteine but not methionine donates a S-atom to the chemical structures of glucosinolates.

5. Which is a true statement?

- a) In isoflavone, ring A is attached to C-3' of ring C.
- b) In isoflavone, ring B is attached to C-3' of ring C.
- c) In isoflavone, ring C is attached to C-3 of ring B.
- d) In isoflavone, ring B is attached to C-3 of ring C.
- e) In isoflavone, ring B is attached to C-3 of ring A.

6. Ethanol and methanol are suitable to extract flavonoids because (flavonoids):

- a) They are charged compounds.
- b) They contain a heterocyclic ring.
- c) They are hydroxylated compounds.
- d) They are rich in acetophenones.
- e) Ring C in its structure is commonly unsaturated.

7. An extract from wild cherry can be used as:

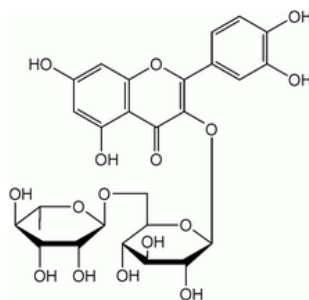
- a) To synthesize corticosteroids.
- b) Anti-inflammatory.
- c) Diuretic.
- d) Sedative.
- e) A + C.

8. Amygdaline upon hydrolysis by amygdalase yields:

- a) Mandelonitril glucoside.
- b) Benzaldehyde.
- c) Prunasin.
- d) A + B.
- e) A + C.

9. Ring B in flavonoid structure is derived from:

- a) Acetate.
- b) Acylpolymalonate.
- c) Cinnamic acid.
- d) Mevalonic acid.



10. The hydrolysis of this compound

yields:

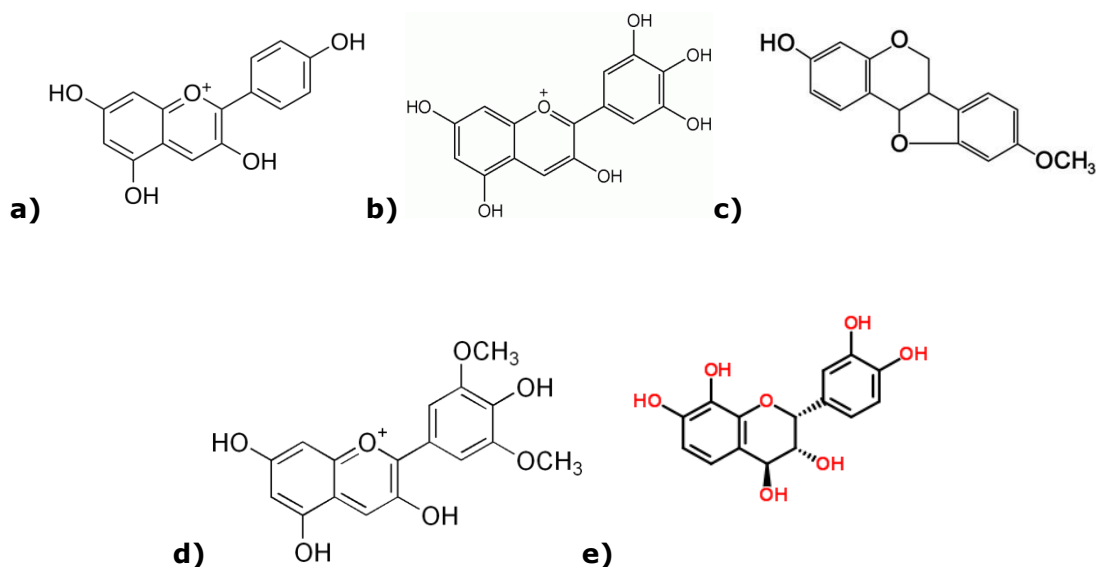
- a) Rutin.
- b) Quercetin.
- c) Genistin.
- d) Cyanidin.

11. Menopausal complaints (اعتلالات انقطاع الطمث) are highly relieved by active ingredients existing in (موجودة في):

- a) Genista species.
- b) Soybean.

- c) *Fagopyrum esculentum*.
- d) B + C.
- e) A + B.

12. *Vaccinium myrtillus* is rich in which compound?



13. A plant commonly used for hypertension (to help treat hypertension) is:

- a) *Hibiscus subdariffa*.
- b) *Vaccinium myrtillus*.
- c) *Thea senensis*.
- d) *Acacia* spp.

14. All the following is true except:

- a) Neutral steroidal saponin glycosides are spiroketal ones.
- b) The acidic saponins miss the steroidal structure.
- c) *Discorea*, like *Centella*, contains acidic saponins.
- d) Saponins can be used as fish – poison.

15. A plant that has anti-inflammatory, expectorant and demulcent effects, and can raise blood pressure is most possibly:

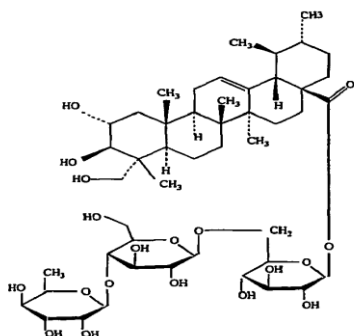
- a) *Glycyrrhiza glabra*.
- b) *Quillaja saponaria*
- c) *Aesculus hippocastanum*.
- d) *Eleutherococcus senticosus*.

II. True / False Questions

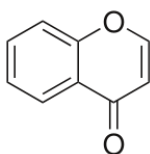
Decide whether each of the following statements is (True) or (False) (1-14)? [1 mark each]

1. Siberian ginseng is contraindicated in diabetic patients.

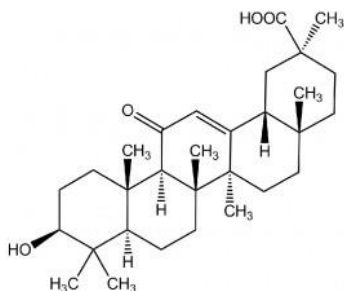
2. The root is the used part of *Panax quinquefolius*.



3. _____ is a principal (chief, main) constituent in *Aesculus hippocastanum*.



4. _____ is the basic structure of coumarins.



5. _____ This structure refers to (belongs to, يخص) glycyrrhetic acid.

6. O-hydroxybenzoylglucoside is coniferin.

7. Vanilla tree belongs to the family Ericaceae.

8. Rapeseed is rich in isothiocyanate glucosides.

9. HCN occurs in the seeds of a variety of Rosaceae species bound to sugar moieties through an oxygen atom.

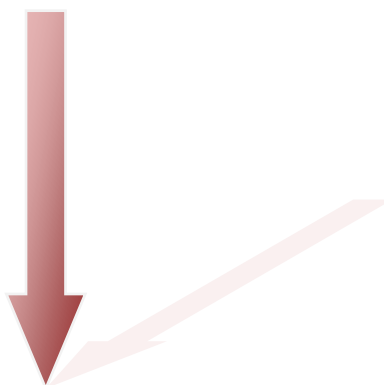
10. Peach is a species in *Prunus* genus.
11. Cyanophore glycosides can be derived from tyrosine.
12. *Anamirta cocculus* is a poisonous plant due to its content of an anti-cholinergic agent.
13. Cantharadin works as aphrodisiac by stimulating the secretions from the prostate gland adjacent (near) the urinary bladder.
14. Mastalgia in women, edema and skin eruptions are symptoms of licorice abuse syndrome.
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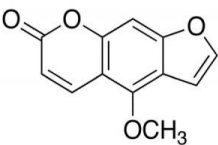
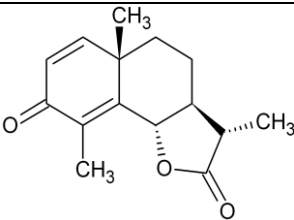
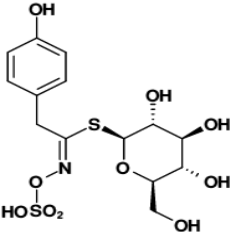
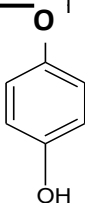
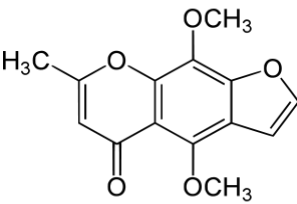
III. MATCHING:

Match each item in column A with the most fitting and best explaining expression in column B. [Write the **letter** of the statement in column B beside the item in column A.

All answers should be transmitted to the answer sheet on the first page] (1-12):-

_____ [1 mark for each space]



	Column A		Column B
1	Picrotoxin	A	Yam
2		B	
3	Vanillin	C	Hesperidin
4	Amiodarone	D	
5	<i>Discorea</i>	E	Aphrodisiac
6	<i>Ammi majus</i>	F	Barbiturate poisoning antidote
7	Glucose — 	G	 analogue
8	<i>Brassica alba</i>	H	Leg ulcers
9	Blister beetles	I	Photosensitizing agent
10	Aescin	J	Leukoderma
11	<i>Artemisia cina</i>	K	Isoeugenol and coniferyl alcohol
12	Permeability vitamin	L	Diuretic and urinary antiseptic

Quiz 3

Answer with TRUE or FALSE?

1. Arbutin is a glycoside.
2. Acetate – ferulic acid – vanillin, is a correct pathway in the biosynthesis of vanillin glycoside.
3. Chromones are benzo-1,4-pyrone derivatives.
4. Medicarpin is a phytosterol.
5. Rotenone is obtained from *Thea senensis*.

“With best wishes”