



October University for Modern Sciences & Arts Model Answer of Midterm Exam

Faculty	Pharmacy
Department	Pharmacognosy
Module Code	PHG112
Module Title	Pharmacognosy
Semester	Spring 2023
Date	28-3-2023
Time Allowed	1 hour
Total Mark	30 marks
No. of Pages	5
Material provided	-
Equipment permitted	-
Additional Instructions	All Answers must be in English otherwise it will not be considered.

No books, paper or electronic devices are permitted to be brought into the examination room other than those specified above.

All questions are to be answered. The exam is located in THREE PAGES . Total marks= 30

Question 1:

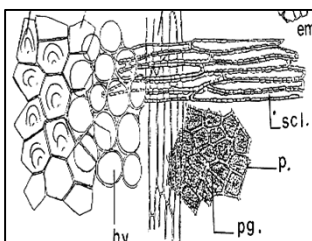
(15 marks)

The following 10 sentences describe 5 medicinal plants, plant (A) is a seed with starchy perisperm, plant (B) is a glossy-brown seed with straight embryo, plant (C) is a spice seed with a pigment layer devoid of coloring matter, plant (D) is a rat poison seed, plant (E) is a seed used as a source of soluble dietary fiber.

Identify these plants, record 2 sentences number and one figure's letter (F-L) describing each plant at the given table (each space 0.5 mark) .

	Plant name	Sentence number		Figure's letter	Main active constituent	One use
A	cardamom	2	4	H	Volatile oil	Spice
B	linseed	7	10	F	Unsaturated Fatty acids...	Treatment of inflammation
C	White mustard	5	8	J	Thioglycoside	Counter irritant
D	Nux vomica	1	3	L	Alkaloids	Increase BP
E	psyllium	6	9	G	Mucilage	Laxative

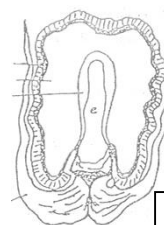
- 1-It has a hairy testa
- 2-It can be tested with Sudan III and iodine
- 3-It has a cordate embryo
- 4- It has arillus outgrowth
- 5-Its hypodermis formed of 2 layers of collenchyma
- 6-Its husk is indigestible and is a source of dietary fiber
- 7- It can be tested with sudan III and Guignard's paper test
- 8-It has pungent taste but not pungent odor
- 9-It can be used for diabetic patients
- 10-It is used in painting to speed up the drying of the oil



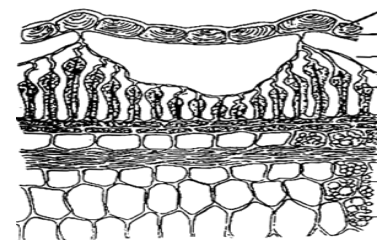
F



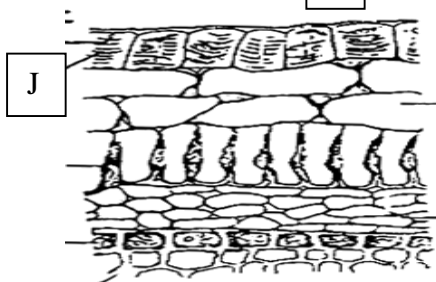
G



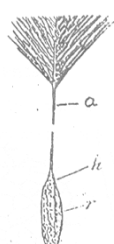
H



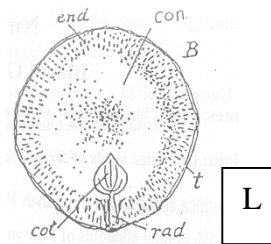
I



J



K

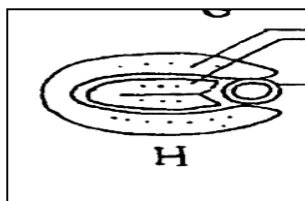


L

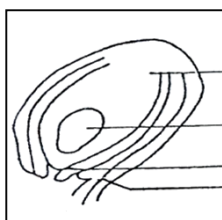
Question 2: (6 marks)

I-Correct the underline word at each sentence by a suitable term and match it by a corresponding figure titled (A-H), BLACK SPACES ARE NOT REQUIRED:

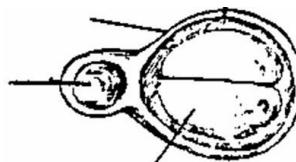
Sentences	Corrected word	Figure
1- In <u>amphitropous</u> ovule, the ovule is bent upon the funicle (180°) and fused with it so that the micropyle is near the placenta and the raphe runs from one end to the other.	Anatropous	B
2-The <u>microphyle</u> is the scar left by the removal of the seed from its funicle or stalk	Hilum	
3- <u>Testa</u> is the basal swollen part of the nucellus from which arise the integuments & where the vascular strand from the funicle branches to enter different parts of ovule	Chalaza	
4- <u>Foenugreek</u> is an example of a typical albuminous seed	Nutmeg	F
5-In <u>Orthoplocus</u> embryo, the radicle may be bent against the two straight cotyledons i.e. against their edges	Accumbent	C
6- <u>Wing</u> is the out growth of a seed used as antigout	Strophiole	D
7-The epidermis of <u>Nux vomica</u> is prolonged into long hairs showing one lignified rib	Strophanthus	H



A



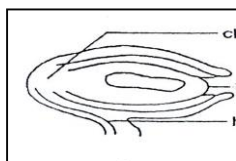
B



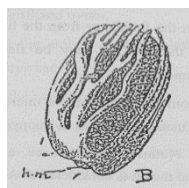
C



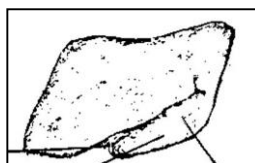
D



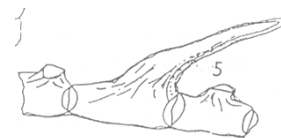
E



F



G



H

Question 3: Solve each of the following cases

(6 marks)

Case 1: A Patient comes into the emergency room in a state of extreme anxiety, expressing a fear that he is dying. His pulse is thread, rapid, and irregular with a rate of 150 beats/minutes. A probable diagnosis of heart failure and peripheral edema is established.

1-Suggest the name of a drug that is likely to be needed in the treatment? (1 mark)

2-What is the main active constituent of this drug? How can you test for this constituent? (one mark)

Strophanthus seed

Cardiac glycosides (K-strophanthin, K- strophanthoside, ouabin)

66% sulphuric acid yields green color in the endosperm and red color in the embryo

Case 2:

A 36 years old female is complaining of increased urine output, especially at night, and feeling thirsty. A random plasma glucose level test gave a value of 280 mg/dl. She was diagnosed as type 2 diabetes and the following seed was prescribed to her.

1-What is the name and the main active constituent of this seed? (1 mark)

Foenugreek seed

Main active constituent

2- Identify the labels (1-4) (1 mark)

1- **Palisade-like epidermal cells**

2- **Basket-like hypodermis**

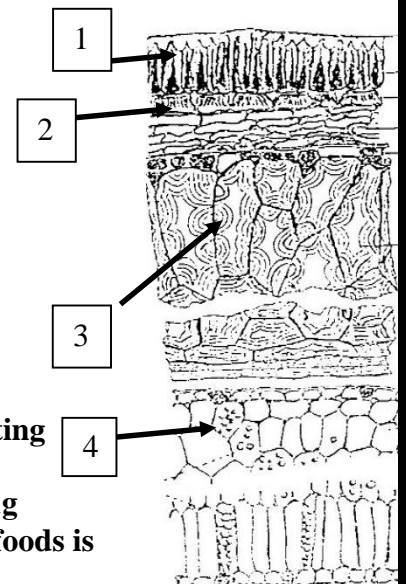
3- **Endosperm with mucilage**

4- **Embryo**

3- Do you suggest any contraindications using this seed ? (1 marks)

1-The hypoglycemic activity of fœnugreek may interfere with an existing hypoglycemic therapy.

2-Oxytoxic and uterine stimulant activity ,the use of fœnugreek during pregnancy in doses greatly exceeding those normally encountered in foods is not advisable.



Case (3):

An 80 years old man has trouble remembering things that happened recently or names of people he knows, he has trouble in speaking, reading & writing. He was diagnosed to have dementia & memory loss (Alzheimer disease). What is the name and the main active constituent of the seed used to reduce these symptoms? (1 marks)

Calabar beans

Synthesis of rivastigmine used to treat this problem

Question 4: You are provided with 6 sentences in each one circle the odd one out to which the mentioned parameter DOES NOT APPLY. (3 marks, 0.5 mark each)

1-Linseed- **Foenugreek**- Black mustard

(Test with Ruthenium Red)

2-Cardamom-Linseed-**Nux vomica**

(Raphe)

3- **Psyllium**-Black mustard- Castor seed

(Topical use)

4-Linseed-White mustard- **Foenugreek**

(Glycosides)

5-Nigella-Cardamom-Colchicum

(Contains volatile oil)

6- Nux vomica- **Pumpkin seed** –Castor seed

(Toxic seed)

End of questions