October University for Modern Sciences & Arts

Model Answer of Midterm Exam

Faculty	**Pharmacy**
Department	**Pharmacognosy**
Module Code	**PHG 112 (Year 1)**
Module Title	**Pharmacognosy**
Semester	**Fall 2026**
Date	**11/ 11 / 2026**
Time Allowed	**One hour**
Total Mark	**30 Marks**
No. of Pages	**5 (cover page is not included)**
Material provided	**----**
Equipment permitted	**----------**
Additional Instructions	**All answers must be in English otherwise they will not be considered**

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

October University for Modern Sciences and Arts **PHG 112**
Faculty of Pharmacy- Pharmacognosy department **Pharmacognosy**
Model Answer of Midterm Exam – Fall 2026 **Time allowed: One hour**
Course Coordinators: Assoc Prof Dr Soumaya Saad Zaghloul **Date: 11/11/2026**
Dr./ Passant Mahmoud

All questions are to be answered. **Total marks= 30**

Question 1: Choose the correct answer: **(8 marks, 0.5 mark each)**

1-It arises from fusion between the funicle with the integument.
a-Micropyle b-Hilum c- Kernel **d- Raphe** e-Plumule

2- Arillus is a type of outgrowth of testa present in……seeds.
a- Strophanthus **b-Cardamom** c-Nutmeg d-Colchicum e-Castor

3-……..seed is used in the treatment of gout
a- Calaber bean **b-Colchicum** c-Nigella d- Evening primerose e- Chia

4-……..is an example of exalbuminous seed
a-Cardamom b-Linseed c-Foenugreek **d-Mustard** e-Strophanthus

5- …… seeds are used as analgesic in respiratory disorders, and to support immune system
a-Nigella b-Castor c- Foenugreek d- Jojoba e- Pumpkin

6-……. is the main key element used for the identification of anise.
a-Mat-like structure **b- Non glandular hair** c-Endosperm d-Glandular hair e-Palisade-like epidermal cells

7- Apple is classified as……fruit
a-Simple b-Aggregate c- Drupe d- Berry **e-False**

8- Wheat grain fruits are classified as……. fruits.
a-False b-Dehiscent **c-Indehiscent** d-Schizocarpic e-Polycarpous

9-……is the seed used to treat Alzheimer's disease
a- Nigella b-Castor **c- Calabar beans** d- Jojoba e- Pumpkin

10- ……is a minute thread that lies between the two mericarps of Umbelliferous fruits.
a- Stylopod b-Cremocarp **c- Carpophore** d-Primary ridge e-Secondary ridge

11-A fruit that has strong lipolytic activity
a-*Ammi visnaga* b-Fennel **c- Coriander** d- Star anise e- lemon

12-Star anise is used as antiviral drug due to the presence of
a-Anethol b-Linoleic acid c-Thymoquinone **d-Shikimic acid** e-Limonene

13-It relieves pain and itching by acting on sensory nerves in diabetic neuropathy and rheumatoid arthritis.
a-Nigella b-Linseed c- Foenugreek **d- Capsicum** e- Pumpkin

14- The cremocarps of the Umbelliferous fruits shows a total of …… 1ry ridges.
a-6 b-8 **c-10** d-12 e-14

15-All the followings are correct about psyllium except
a-Bulk laxative b- May cause flatulence **c-Rich in phytoestrogens**
d-Contains acidic mucilage e- Promising in lowering cholesterol

16-All the followings are correct about chia seeds except
a-Used to treat obesity b- Used to treat diabetes c-Increase the risk of bleeding
d-Contains cardiac glycosides e-Contains dietary fibres

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
d	**b**	**b**	**d**	**a**	**b**	**e**	**c**	**c**	**c**	**c**	**d**	**d**	**c**	**c**	**d**

Question 2: Give reasons for each of the following. (6 marks, 2 marks each)

1- Despite having linamarin cyanogenic glycosides, which releases the toxic HCN gas, linseed can be used internally.

The toxic effects arising from the liberation of HCN from the cyanogenic glycoside (Iinamarin) by the enzyme linamarase is not affecting humans due to the following:

1. When crushed seeds are taken internally, linamarase is partly inactivated under the influence of the acidity of the stomach and less than 1% of the cyanogenic glycoside is hydrolyzed.

2. Hydrolysis time of four hours is required *in vivo* system.

3. The majority of HCN, liberated is converted rapidly into the relatively non-toxic thiocyanate through a detoxification mechanism in the body.

4. The minor part of HCN remained is eliminated via the urine and the feces.

2- Fenugreek seeds are contraindicated during pregnancy, while it is recommended after labor.

Fenugreek seeds are contraindicated during pregnancy due to its oxytoxic and uterine stimulant activity, the use of fœnugreek during pregnancy and lactation in doses greatly exceeding those normally encountered in foods is not advisable.
while it is recommended after labor due its lactagogue effect.

3- Psyllium seeds should be taken with adequate volume of water.

The indigestible fiber in psyllium seed can cause <u>flatulence</u> and abdominal discomfort.
If psyllium seed is not taken with adequate water, it can clump together in a mass and <u>block the digestive tract.</u>
Sufficient fluid is essential to the safe and successful use of psyllium seed.

Question 3: Read carefully the following cases and answer the corresponding questions (16 marks)

Case 1: A young girl was suffering from chronic diarrhea or constipation, abdominal bloating and excessive gas, abdominal pain and cramps, nausea and vomiting, weakness, reduced appetite. She was diagnosed to have celiac disease.

- **Advise her to use crude drug in her food (1 mark). Quinoa seeds**
- **Suggest the active constituents of this drug (1 mark).**

1-One of the best vegetable sources of protein. Eessential amino acids such as lysine and methionine.
2- Large quantities of vitamins (thiamin, vitamin C) and minerals
3- High content of fibre, and carotenoids
4-Terpenoids, flavonoids, phenolic acids, and steroids.

Case 2: A young lady was suffering from vitiligo (leukoderma).

Suggest a drug for treatment of this case (1 mark). *Ammi majus*

What should you warn her about this drug (1 mark). Photo-dermatitis in sensitive individuals

How can you differentiate it from the other species (2 differences; uses and active constituents) (2 marks).

Ammi visnaga	*Ammi majus*
Bitter principles: Khellin, visnagin and visnadin. **Flavonoids: quercetin.** **Essential oil containing α-terpineol and linalool-** **Fixed oil & protein.**	**Bitter principles: Psoralene and Ammidin.** **Fixed oil & protein.**
Spasmolytic especially on the muscles of the bronchi, GIT, biliary tract, urogenital system, and coronary vessels **1- Whooping cough It is now given for bronchial asthma and is safe even for children** **2- Cramp-like conditions of GIT, biliary colic, and painful menstruation.** **3- It is used for the removal of gall bladder and kidney stones by relaxing the muscles of the ureter.** **4- The drug relaxes the coronary arteries, helps to improve the blood supply to the heart muscle, and thereby eases angina pectoris.**	**Psoralene stimulates pigment production in skin exposed to UV light.** **It is used externally as liniments and lotions for treating vitiligo, alopecia, and psoriasis.**

Case 3: A child presents to the emergency department with nausea, vomiting, watery diarrhea, abdominal pain, stomach cramps, and fever. Food poisoning is suspected.

Answer the following questions:

a) Suggest two crude drugs that may be responsible for these symptoms. (2 marks)

Hemlock fruit OR **Castor seed**

b) Identify the toxic active constituents responsible for the toxicity of each crude drug. (2 marks)

Hemlock: Coniine

Castor: Ricin

c) Describe a suitable test for the detection or identification of each toxic drug. (2 marks)

Hemlock:

1-by chemical test for alkaloids (Mayer's test).

2-Rubbing the fruits with solution of caustic alkali, it develops a strong mice-like odor.

Castor:

1-by chemical test for alkaloids (Mayer's test).

2- Fixed oil: Sudan III

Case 4: Your sister suffers from damaged hair and dandruff associated with scalp irritation. She asks you, as a pharmacy student, to recommend two crude drugs that could be incorporated into a herbal hair-care preparation to help alleviate these problems.

a) Suggest two suitable crude drugs for this preparation. (2 marks)

Lineseed, Jojuba, Fenugreek and Castor .(any two)

b) Mention the main active constituents of each crude drug. (2 marks)

Lineseed: Mucilage

Fenugreek: Mucilage

Jojuba: Fixed oil

Castor: Fixed oil

---------- **End of questions**