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**M.Sc. (Fourth Semester)
EXAMINATION, MAY-JUNE, 2022**

CHEMISTRY

Paper No. - CH-20

(Natural Product and Medicinal Chemistry)

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt all sections as directed.

(Section-A)

(Objective/Multiple Choice Questions)

(1 mark each)

Note- Attempt all questions.

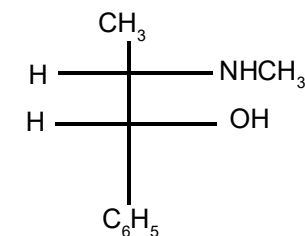
Choose the most appropriate answer.

1. The number of isoprene unit in diterpenoid and sesquiterpenoid -
- (A) 3 and 4
 - (B) 4 and 3
 - (C) 5 and 4
 - (D) 4 and 5

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2. The given compound is

- (A) D (-) Ephedrine
- (B) L (+) Ephedrine
- (C) Nicotine
- (D) Coline



3. Citral is a?

- (A) Monoterpenoid
- (B) Diterpenoid
- (C) Triterpenoid
- (D) Tetraterpenoid

4. Geraniol on oxidation with MnO_2 gives -

- (A) Menthol
- (B) Farnesol
- (C) Citral
- (D) Luteolin

5. Which combination is true for terpenoids and alkaloids respectively?

- (A) Citral and Phytol
- (B) Morphine and Zingiberene
- (C) Atropine and coline
- (D) Geraniol and Morphine

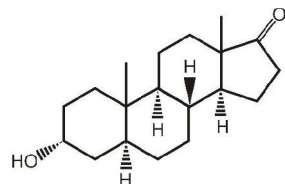
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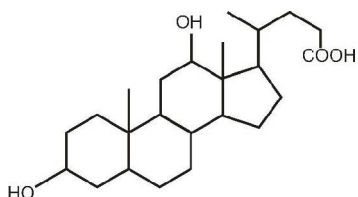
6. The given structure is -

- (A) Aldosterone
- (B) Testosterone
- (C) Progesterone
- (D) Androsterone



7. The given structure is -

- (A) Cholesterol
- (B) Bile Acid
- (C) Esterone
- (D) Testosterone



8. Which one of the following is not plant pigment?

- (A) Butein
- (B) Hirsutidin
- (C) Vitexin
- (D) Azacrin

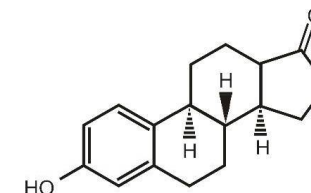
9. Which one of the following is a steroid?

- (A) Myrcetin
- (B) Vitexin
- (C) Progesterone
- (D) Diadzine

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10. The given structure is -

- (A) Cholesterol
- (B) Progesterone
- (C) Estrone
- (D) Testosterone



11. What does the symbol P present in a QSAR equation?

- (A) pH
- (B) Plasma concentration
- (C) Partition coefficient
- (D) Prodrug

12. The pharmacological activity of diosgenin-

- (A) It produces a synergistic effect on body
- (B) Rheumatic arthritis
- (C) Only B is right
- (D) Both A and B are right

13. Which of the following has poor oral absorption?

- (A) Progesterone
- (B) Pentobarbitone
- (C) Medroxyprogesterone
- (D) Thiobarbitol

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14. Which of the following needs to be established before the search for a lead compound takes place?

- (A) The pharmacophore
- (B) Structural activity relationship
- (C) A bioassay
- (D) Patents

15. The first step in the drug discovery process is -

- (A) Lead modification
- (B) Lead Identification
- (C) Lead Validation
- (D) Lead Optimization

16. Which of the following does not affect the activity of penicillin -

- (A) Bile
- (B) Hydrochloric acid
- (C) Cystein
- (D) Sodium hydroxide

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17. Which one of the following 4-amino quinoline is used in malaria and rheumatoid arthritis?

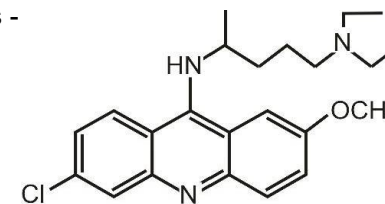
- (A) Santonin
- (B) Amodiaquine
- (C) Chloroquine
- (D) Pyremethamine

18. Most common side effect of quinine is -

- (A) Headache
- (B) Deafness
- (C) Coma
- (D) Respiratory dysfunction

19. The given structure is -

- (A) Azacrine
- (B) Mepacrine
- (C) Camaquine
- (D) Pyremethamine



20. Which one of the following species caused most serious malaria complication?

- (A) Plasmodium vivax
- (B) Plasmodium Malariae
- (C) Plasmodium Facifarum
- (D) Plasmodium Ovale

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(Section- B)

(Very Short Answer Type Questions)

(2 marks each)

Note : Attempt all questions.

1. Write the structural properties of Menthol.
2. What is morphine?
3. What are the role of steroids?
4. How do you isolate the plant pigments?
5. What do you mean by SAR?
6. Define pharmacophore.
7. Write the synthesis of tetracyclin.
8. Draw the structure of pyrimethamine.

(Section - C)

(Short Answer Type Questions)

(3 marks each)

Note : Attempt all questions.

1. Write the chemical reaction of citral.
2. Write the synthesis mechanism of Morphine.
3. Discuss the structural feature of bile acid.
4. Discuss the structural determination of diazine.
5. Discuss the factor affecting the development of a new drug.
6. What do you mean by pro drug and soft drug?
7. What are alkylating agents?

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8. Discuss the synthesis process of chloramphenicol.

Section D

(Long Answer Type Questions)

(5 marks each)

Note:- Attempt all questions.

1. What are terpenoids? Discuss the synthesis and application of fernesol.

OR

What are alkaloids? Discuss the synthesis and application of Quinine.

2. What are steroids? Discuss the synthesis of Progesteron.

OR

Discuss the synthesis steps of Apegenin and Lutonin.

3. What do you mean by pharmacokinetic and phamacodynamic explain?

OR

Discus the following:

- (a) Drug receptor
- (b) Lipophilicity

4. Discuss the synthesis of streptomycin.

OR

What are antimalaria agents? Discuss the synthesis and applications of pentaquine.

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