

Exam Date &amp; Time: 28-Dec-2021 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education  
 Manipal College of Pharmaceutical Sciences  
 B-Pharm - Semester -V  
 End Semester Examination December- 2021

Course Code: PCH-BP501T  
 Course Title: MEDICINAL CHEMISTRY-II (THEORY)

### Medicinal Chemistry II [PCH-BP501T]

Marks: 75

Duration: 180 mins.

#### I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) Which of the following H1 antihistamines is obtained by isosteric replacement of sulphur atom of phenothiazine analogs by an isosteric vinyl group

1) Buclizine	2) Cyproheptadine	3) Promethazine	4) Diphenhydramine
--------------	-------------------	-----------------	--------------------

(1)

- 2) Synthesis of which of the following drugs involves aminoalkylation of p-methyl acetophenone with pyrrolidine and formaldehyde

1) Triprolidine	2) Procyclidine	3) Cimetidine	4) Promethazine
-----------------	-----------------	---------------	-----------------

(1)

- 3) Which of the following diuretic is a potassium sparing aminopyrazinoyl guanidine derivative

1) Triamterene	2) Spironolactone	3) Amiloride	4) Methazolamide
----------------	-------------------	--------------	------------------

(1)

- 4) Which among the following diuretic is a anthranilic acid derivative

1) Bumetanide	2) Dichlorphenamide	3) Triamterene	4) Furosemide
---------------	---------------------	----------------	---------------

(1)

- 5) Which of the following calcium channel blocker is not useful in the treatment of cardiac arrhythmia (1)
- |               |              |              |             |
|---------------|--------------|--------------|-------------|
| 1) Amlodipine | 2) Verapamil | 3) Diltiazem | 4) Bepridil |
|---------------|--------------|--------------|-------------|
- 6) Which of the following antiarrhythmic drug shortens the action potential duration (1)
- |              |              |               |                 |
|--------------|--------------|---------------|-----------------|
| 1) Quinidine | 2) Phenytoin | 3) Lorcaïnide | 4) Procainamide |
|--------------|--------------|---------------|-----------------|
- 7) Which of the following antiarrhythmic drug causes inhibition of adrenergic stimulation to the heart and cannot be given to patients with bronchial asthma (1)
- |              |              |                |               |
|--------------|--------------|----------------|---------------|
| 1) Quinidine | 2) Phenytoin | 3) Propranolol | 4) Metoprolol |
|--------------|--------------|----------------|---------------|
- 8) Which among the following is not a prodrug (1)
- |               |                |                 |               |
|---------------|----------------|-----------------|---------------|
| 1) Clofibrate | 2) Simvastatin | 3) Atorvastatin | 4) Lovastatin |
|---------------|----------------|-----------------|---------------|
- 9) Which among the following antidiabetic drugs is an antihyperglycemic agent but not a hypoglycemic agent (1)
- |                |                |              |              |
|----------------|----------------|--------------|--------------|
| 1) Tolbutamide | 2) Repaglinide | 3) Metformin | 4) Glipizide |
|----------------|----------------|--------------|--------------|
- 10) In sulphonyl urea hypoglycaemics, which among the following substitutions on the terminal nitrogen of sulphonyl urea shows optimal hypoglycaemic activity (1)
- |             |                       |                 |           |
|-------------|-----------------------|-----------------|-----------|
| 1) N-methyl | 2) C3-C6 alkyl groups | 3) N,N-dimethyl | 4) N-Aryl |
|-------------|-----------------------|-----------------|-----------|
- 11) Sex steroids are also known as (1)
- |                    |                 |                |                 |
|--------------------|-----------------|----------------|-----------------|
| 1) Gonadalsteroids | 2) Phytosterols | 3) Ergosterols | 4) Stigmasterol |
|--------------------|-----------------|----------------|-----------------|
- 12) Thioguanine inhibits (1)
- |                        |                            |                            |                    |
|------------------------|----------------------------|----------------------------|--------------------|
| 1) Purine biosynthesis | 2) Pyrimidine biosynthesis | 3) Carbohydrate metabolism | 4) Gluconeogenesis |
|------------------------|----------------------------|----------------------------|--------------------|
- 13) Give an example of DNA Alkylators (1)

1)	Doxorubicin	2)	Daunorubicin	3)	Foxuridine	4)	Cyclophosphamide
----	-------------	----	--------------	----	------------	----	------------------

14) A synthetic nonsteroidal estrogen used in the treatment of menopausal and postmenopausal disorders.

1)	Norgestril	2)	Lisinopril	3)	Diethyl stilbesterol	4)	Atenolol	(1)
----	------------	----	------------	----	----------------------	----	----------	-----

15) Which of the following is a hydroxy steroid

1)	Betamethasone	2)	Methimazole	3)	Tadalafil	4)	Sildenafil	(1)
----	---------------	----	-------------	----	-----------	----	------------	-----

16) Which of the following is an anti-inflammatory 9-fluoro-glucocorticoid

1)	Cortisone	2)	Hydrocortisone	3)	Dexamethasone	4)	Betamethasone	(1)
----	-----------	----	----------------	----	---------------	----	---------------	-----

17) Which of the following drug is a sulfhydryl containing ACE Inhibitor

1)	Norgestril	2)	Lisinopril	3)	Captopril	4)	Enalapril	(1)
----	------------	----	------------	----	-----------	----	-----------	-----

18) Which of the following is an example of a vasodilator drug

1)	Hydrochlorothiazide	2)	Furosemide	3)	Chlorthalidone	4)	Hydralazine	(1)
----	---------------------	----	------------	----	----------------	----	-------------	-----

19) Which of the following is an alpha -1 adrenergic blocker

1)	Timolol	2)	Propranolol	3)	Metoprolol	4)	Prazosin	(1)
----	---------	----	-------------	----	------------	----	----------	-----

20) Which among the following is an antidote medication that is used to reverse the effects of heparin

1)	Menadione	2)	Protamine sulphate	3)	Clopidogrel	4)	Warfarin	(1)
----	-----------	----	--------------------	----	-------------	----	----------	-----

## II Long Answers

**Answer all the questions.**

21) Explain the various structural features required for of H1 antihistaminic activity (5)

- A)
- B) Give the synthesis of any one high-ceiling diuretic and explain the SAR of high-ceiling diuretics (5)
- 22) Classify local anesthetics giving the structure of one agent from each class and discuss the SAR of anilide type of local anesthetics (5)
- A)
- B) Explain the mechanism of action of DNA alkylators and write the structure of two antimetabolites (5)

### III Short Answers

#### Answer all the questions.

- 23) Explain how nitrovasodilators produce smooth muscle relaxation? Outline the synthesis of glyceryl trinitrate (4)
- A)
- B) Give the structure and uses of any one proton pump inhibitor (1)
- 24) Explaining cardiac electrophysiology classify antiarrhythmic agents with one structure from each class (5)
- 25) Classify oral hypoglycaemic agents giving one structure from each class (3.5)
- A)
- B) Outline the synthesis of tolbutamide (1.5)
- 26) Explain the structural features of lovastatin responsible for inhibiting HMG-CoA reductase enzyme (2.5)
- A)
- B) Outline the method of synthesis of Dibucaine (2.5)
- 27) Write the structure and uses of the following drugs  
a) Norgestrel b) Methimazole c) Hydrocortisone d) Diethyl stilbestrol (5)
- 28) What are corticoids? Discuss the stereochemistry of steroid hormones (5)
- 29) Write the structure and uses of two anticoagulant drugs and outline the method of synthesis of warfarin (5)

-----End-----