

S-801

Roll No. ....

## CHE-554

### Drugs and Pharmaceuticals

M. Sc. CHEMISTRY (MSCCH-12/13/16/17)

Second Year, Examination, 2018

**Time : 3 Hours**

**Max. Marks : 80**

**Note :** This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. Attempt the questions contained in these Sections according to the detailed instructions given therein.

#### Section-A

#### (Long Answer Type Questions)

**Note :** Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. (a) Write briefly about different types of antagonism. 7  
(b) Write short notes on any *three* of following :  
4 each
  - (i) Random Screenings
  - (ii) Calcium Channel Antagonists
  - (iii) Histamine antagonists
  - (iv) Simplification of Structure
2. (a) Explain the importance of enzymes and enzyme products in drug discovery. 9  
(b) Explain the concept of QSAR with suitable examples. 10

3. (a) What are the quality control methods in drug development ? 6
- (b) What is the importance of ACE ? Explain the ACE inhibitions. 7
- (c) How are the NMR and UV spectroscopy useful for the drug analysis ? 6
4. (a) What is the lead compound for sulphonamide antibacterial ? Write the structure of any *four* sulphonamide antibacterial ? 10
- (b) Write the synthesis of Propranolol, Metoprolol and Atenolol. 9

### Section–B

#### (Short Answer Type Questions)

**Note :** Section ‘B’ contains eight (08) short answer type questions of eight (8) marks each. Learners are required to answer *four* (04) questions only.

1. Write the synthesis and mode of action of penicillins.
2. Define the linker. What are the linkers used in combinational synthesis.
3. (a) How is cluster analysis useful in drug development ?
- (b) What is the difference between Gram positive (G + ve) and Gram negative (G – ve) bacteria.
4. (a) Discuss the merits and demerits of QSAR.
- (b) Write a short note on lipophilicity.
5. What are immunosuppressing agents ? Give suitable examples.
6. (a) What are the vaccines ? Explain its importance.

- (b) Write the short notes on the following :
- (i) Sodium Channels
  - (ii) Potassium Channels
7. (a) Explain the Hanch method of QSAR studies.
- (b) Write the structure of any *two* of the following neurotransmitens :
- (i) Histamine
  - (ii) Scrotonin
  - (iii) Adrenaline
8. Match the items of column A and B :

Column A	Column B
Bee Venom	Artemisinin
Anticancer durg	Apamin
Natural product	Taxol
Quininine	Paracetamol
$\beta$ -lactum ring	Cinchona bark
Antipyretics	Penicillin
Sedative drug	Betadine
Antiseptics	Diazepam

### Section-C

#### (Objective Type Questions)

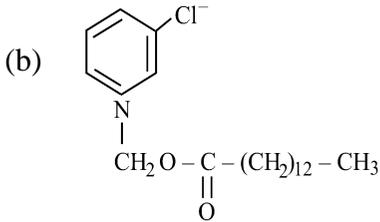
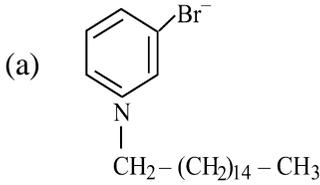
**Note :** Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this Section are compulsory.

Choose the right answers.

1. The size of viruses is :
  - (a) 0.01 – 0.5  $\mu\text{m}$

- (b)  $0.02 - 0.1 \mu\text{m}$
  - (c)  $0.02 - 0.4 \mu\text{m}$
  - (d)  $0.01 - 0.3 \mu\text{m}$
2. Tetracyclines contain :
- (a) Two rings
  - (b) Three rings
  - (c) Four rings
  - (d) Five rings
3. Female sex hormones are :
- (a) Androgen and Progesterones
  - (b) Estrogens and Androgens
  - (c) Progesterones and Estrogens
  - (d) Corcosteroids and Estrogens
4. Who discovered the Penicillin ?
- (a) Edward Jenner
  - (b) A. Fleming
  - (c) Mendel
  - (d) Dalton
5. Which is the lead compound ?
- (a) Benzene
  - (b) Histamine
  - (c) Sulfoguanine
  - (d) Oxazole

6. Which one is the soft drug ?



(c) Both of these

(d) None of these

7. Which disease is caused by bacteria ?

(a) Tuberculosis

(b) Diphtheria

(c) Cholera

(d) All of the above

8. Which is obtained from natural sources ?

(a) Morphine

(b) Taxol

(c) Cocaine

(d) All of the above

Write True/False :

9. Morphine is a narcotic drug. (True/False)

10. Quinine is an antimalarial drug. (True/False)

