

II. Long answers (Answer two out of three questions)

10x2=20

1. Classify oral hypoglycaemic agents. Describe the mechanism of action and SAR of sulfonylureas. Outline the synthesis of tolbutamide. 2+2+3+3=10
2. Define and classify steroid. Write in detail about the SAR and mechanism of action of testosterone and its derivative as androgenic agent. 2+3+2.5+2.5=10
3. Define and classify H1-antagonist. Discuss in brief about the SAR of H1-antagonist. Outline the synthetic scheme of any two H1-antagonist.

1+2+2+5=10

III. Short answers (Answer seven out of nine questions)

5x7=35

1. Classify antihypertensive drugs. Outline the synthesis of methyldopate hydrochloride. 2+3=5
2. Write in details about the mechanism of action of local anesthetics and outline the synthesis of benzocaine. 2.5+2.5
3. Classify calcium channel blockers. Discuss the SAR of dihydropyridines. 2+3
4. Describe in details about the structure and function of Insulin. 5
5. Define and classify antihypertensive drugs. 5
7. Write a brief note on H2 antagonist. 5
8. Outline the synthetic scheme of any two anticancer drugs. 5
9. Write the MOA and SAR of non-steroidal oestrogen.

2.5+2.5=5

2023/SEM/ODD/BP-501T/003

UG Odd Semester (CBCS) Examination, March 2023

PHARMACEUTICAL SCIENCES

(5th Semester)

Course No: BP 501T

(Medicinal Chemistry II-Theory)

Full Marks: 75

Time: 3 Hours

*The figures in the margin indicate full marks for the questions***I(A). Multiple choice questions**

1x10=10

1. Which one of the following local anesthetic belongs to the ester groups?
 - (i) Procaine
 - (ii) Bupivacaine
 - (iii) Lignocaine
 - (iv) Mepivacaine
2. Different classes of medicinal agents have been listed below: A. 1,4-Dihydropyridines B. Calcium channel blockers C. Anti-anginal agent D. Potassium channel openers; Identify, in which class does the drug Felodipine belong?
 - (i) Both A and B
 - (ii) Only B
 - (iii) A, B and C
 - (iv) A, B, C and D

(Turn Over)

3. The organic nitrates act as vasodilators by binding with which of the following targets?
 - (i) Cytosolic Adenine Cyclase
 - (ii) Cytosolic Guanyl Cyclase
 - (iii) Sarcoplasmic Reticulum
 - (iv) Protein Kinase G
4. The substitution of the aryl group which increases the electron density of carbonyl oxygen in local anesthetics results in-
 - (i) Increased relative toxicities
 - (ii) Decreased relative toxicities
 - (iii) Increased local anesthetic activity
 - (iv) Decreased local anesthetic activity
5. Which component of the Renin-Angiotensin-Aldosterone System is created and found in Liver that is activated by renin?
 - (i) Aldosterone
 - (ii) Angiotensin I
 - (iii) Angiotensinogen
 - (iv) Angiotensin II
6. Choose the correct statement about estrogen
 - (i) Ring D is benzenoid & -OH group at C17 is phenolic
 - (ii) Ring A is benzenoid & -OH group at C3 is alcoholic
 - (iii) Ring A is benzenoid & -OH group at C3 is phenolic
 - (iv) Ring D is quinonoid & -OH group at C17 is alcoholic
7. The following reaction is involved during the preparation of triprolidine
 - (i) Friedel craft alkylation

- (ii) Mannich reaction
 - (iii) Open auer oxidation
 - (iv) Both a and c
8. Alkylating agent attacks on
 - (i) N-7 of guanine
 - (ii) N-1 and N-3 of adenine
 - (iii) N-3 of cytosine
 - (iv) All of these
9. The two hydrogen of a cyclohexane moiety are of following type
 - (i) Both axial hydrogen
 - (ii) Both equatorial hydrogen
 - (iii) One axial and one equatorial hydrogen
 - (iv) None of these above
10. For nomenclature of steroid,
 - (i) 5 α -androstane is used
 - (ii) 5 α -estrane is used
 - (iii) 5 α -pregnane is used
 - (iv) All of these above may be used

I(B). Objective type (Answer the following in brief)

2x5=10

1. What is lante insulin?
2. Write the structure and chemical name of T4 and T3.
3. Write the backbone configuration of 5 α -cholestane and 5 β -cholestane
4. Outline the synthesis of nitroglycerin.
5. Write the structure and chemical name of estradiol and androstendione.

(Turn Over)