Total No. of printed pages = 4

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Roll No. of candidate | | | | | | | | | | |

2021

B.Pharm. 5th Semester End-Term Examination

Pharmacy

MEDICINAL CHEMISTRY - II

(New Regulation)

Full Marks – 75 Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Answer the following (MCQ/ Fill in the blanks) : (20 × 1 = 20)

(i) The drug Cimetidine belongs to the category of

(a) β - blockers (b) α_1 - blockers

(c) H_1 antagonists (d) H_2 antagonists

(ii) The Disulphide linkage in Insulin is normally seen between which amino acid?

(a) Alanine (b) Cysteine

(c) Threonine (d) Glycine

(iii) The drug quinidine sulphate is used as an

(a) Calcium channel blocker (b) Vasodilator

(c) CHF drug (d) Anti-arrhythmic drug

(iv) All steroidal hormones are mainly formed from

(a) Phenyl alanine (b) Testosterone

(c) Aldosterone (d) Cholesterol

(v) Biguanides work by

(a) Activating GLUT receptors

(b) Activating AMPK

(c) Inhibiting α glucosidase

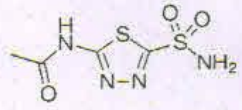
(d) Stimulating the β cells of the pancreas

[Turn over

(vi) Which of these drugs belong to the category of alkylamines?

(a) Chlorpheniramine (b) Diphenhydramine

(c) Promethazine (d) All of these

(vii)  is the structure of which drug?

(a) Timolol (b) Methazolamide

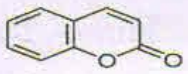
(c) Furosemide (d) Acetazolamide

(viii) Which of these is the starting reactant for the synthesis of Dibucaine?

(a) Toluene (b) Isatin

(c) 4-nitrobenzoic acid (d) Indole

(ix) Which of these drugs has the following structure?



(a) Warfarin (b) Clopidogrel

(c) Menadione (d) Anisindione

(x) Lovastatin acts in which of the following ways

(a) Inhibition of HMG CoA reductase

(b) Bile acid sequestrants

(c) Fibric acid derivatives

(d) Inhibition of cholesterol absorption

(xi) The drug Tamoxifen is used in the treatment of

(a) Prostate cancer (b) Cervical cancer

(c) Breast cancer (d) Ovarian cancer

(xii) Which of these additives are used to extend the life of Insulin?

(a) Protamine (b) Crystalline zinc

(c) Both of these (d) None of these

(xiii) Which of these drugs is used in the treatment of CHF?

(a) Nesiritide (b) Bosentan

(c) Tezosentan (d) All of these

(xiv) The Phenothiazine ring is present in which of these drugs?

(a) Warfarin (b) Diphenhydramine

(c) Promethazine (d) Furosemide

(xv) Nitroglycerin is prepared from

(a) Glycerol (b) Glutaraldehyde

(c) Ethylene glycol (d) Glycine

(xvi) Which of these drugs is a Nitrogen mustard?

(a) Vincristin (b) Taxol

(c) Mercaptopurine (d) Mechlorethamine

(xvii) Which of these is a Potassium sparing diuretic?

(a) Bumetanide (b) Mannitol

(c) Acetazolamide (d) Amiloride

(xviii) Which of these is a totally synthetic hormones?

(a) Progestin (b) Oestradiol

(c) Cortisone (d) Oestriol

(xix) Liotrix is a combination of levothyroxine sodium (thyroxine, T4) and liothyronine sodium (triiodothyronine, T3) in the ratio

(a) 1:4 (b) 4:1

(c) 4:3 (d) 3:4

(xx) Which of these drugs is used as an abortificient?

(a) Levonorgestrol (b) Mifepristone

(c) Norgestrel (d) Progestin

2. Answer any *seven* questions (7× 5 = 35)

(a) Why are proton pump inhibitors more efficient then H_2 antagonists? Explain.

(b) Write a short note on the different thyroid and anti-thyroid drugs used.

(c) Discuss the nomenclature and stereochemistry of steroids.

(d) Discuss the SAR of Local anaesthetics.

(e) Discuss the classification of Oral hypoglycaemics and write the synthesis of Tolbutamide. (2.5+2.5=5)

(f) Discuss the role of Histamine in the body. Write a note on 2nd generation anti-histamines. (2.5+2.5=5)

(g) How do anti-arrhythmic drugs work? Why can Phenytoin be used both as an anti-arrhythmic and an anticonvulsant? (3+2=5)

(h) Write the SAR of Insulin. Mention the different preparations of Insulin used. (3+2=5)

(i) Write the synthesis of (any two) (2.5+2.5=5)

(i) Isosorbidedinitrate

(ii) Mechlorethamine

(iii) Benzocaine.

3. Answer any two questions (2 × 10 = 20)

(a) Classify antineoplastic drugs with suitable examples. Discuss the chemistry behind the mechanism of action of Alkylating agents (4+6=10)

(b) Classify Diuretics with suitable examples. Write the synthesis of Acetazolamide and Chlorthiazide. (5+2.5+2.5=10)

(c) Write the chemical classification of Calcium channel blockers with examples. Discuss the MOA of Antimetabolites. (5+5=10)