Total No. of printed pages = 4

BP 601T

10/5/24

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

2024

B.Pharm. 6th Semester Final Examination

MEDICINAL CHEMISTRY – III (THEORY)

(New Regulation w.e.f. 2017-18)

Full Marks – 75 Time – Three hours

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

1. Multiple Choice Questions (MCQ) (Answer *All* questions) : (20 × 1 = 20)

(i) What type of side effect is most commonly observed in beta-lactam antibiotics?

(a) Hearing loss
(b) Aplastic anaemia
(c) Allergic reaction
(d) Yellowing of teeth

(ii) Which among the following antibiotics act as folate antagonist?

(a) Penicillin (b) Tetracycline
(c) Trimethoprim (d) Cefotaxime

(iii) Benzylpenicillin is the chemical name for which of the following Penicillin?

(a) Penicillin G
(b) Penicillin V
(c) Penicillin F
(d) Phenethicillin

(iv) What reaction is catalysed by a β - lactamase enzyme?

(a) The final cross–linking reaction to form the bacterial cell wall
(b) The hydrolysis of the acyl side chain from penicillin structures
(c) The hydrolysis of the four–membered ring present in penicillins
(d) The biosynthesis of the penicillin structure from the amino acids valine and cysteine

[Turn over

(v) Which of the following antibiotics is a macrolide?

(a) Chloramphenicol (b) Doxycycline

(c) Erythromycin (d) Streptomycin

(vi) Which of the following antibiotics is responsible for Gray Baby Syndrome?

(a) Chloramphenicol (b) Doxycycline

(c) Erythromycin (d) Streptomycin

(vii) Reading the mechanism of action of aminoglycosides, the drugs

(a) Bind to the 50S ribosomal subunit

(b) Cause misreading of the code on the mRNA template

(c) Inhibit peptidyl transferase

(d) Stabilize polysomes

(viii) Tetracycline inhibits protein synthesis by

(a) Inhibiting initiation and causing misreading of mRNA

(b) Binding to 30s ribosomal unit and inhibits binding of aminoacyl t–RNA

(c) Inhibit peptidyl transferase activity

(d) Inhibiting translocation

(ix) Tetracycline has how many rings

(a) 1 (b) 2

(c) 3 (d) 4

(x) The antimalarial drug belonging to pyrimidine derivatives is

(a) Mefloquine

(b) Pyrimethamine

(c) Quinide

(d) Chloroquine

(xi) The group of antibiotics having an antimalarial effect is

(a) Aminoglycosides

(b) Tetracyclins

(c) Carbapenems

(d) Penicillins

(xii) Antimalarials which is dihydrofolate reductase inhibitors

(a) Chloroquine

(b) Chloroguanide

(c) Primaquine

(d) Dapsone

(xiii) Cinchonism side effect is seen with which of the following antimalarial drugs

(a) Quinine (b) Chloroquine

(c) Primaquine (d) Mefloquine

(xiv) For Tuberculosis, the drugs used to combat it are

(a) Steptomycin, Pyrazinamide

(b) Isoniazid, Rifampicin

(c) Both (a) and (b)

(d) None of these

(xv) Quinolones act by

(a) Inhibiting DNA gyrase

(b) Inhibiting bacterial protein synthesis

(c) Inhibiting bacterial cell wall synthesis

(d) Inhibiting intake of folic acid

(xvi) Which of the following is not used in the HIV treatment?

(a) Delavirdine (b) Zidovudine

(c) Rimantadine (d) Stavudine

(xvii) Griseofulvin is an example of

(a) Azole drugs

(b) Polyenes

(c) Heterocyclic benzofuran

(d) Allylamines

(xviii) Which of the following is a benzimidazole derivative

(a) Praziquantel (b) Mebendazole

(c) Suramin (d) Pyrantel

(xix) Which of these drugs has been developed through the use of structure–activity relationships?

(a) Aspirin (b) Gentamicin

(c) Erythromycin (d) Atorvastatin

(xx) Which of the following approach is considered under the 'Ligand based drug designing'?

(a) Molecular docking

(b) Pharmacophore modelling

(c) QSAR Modelling

(d) (b) and (c) both

2. Short answers (Answer any *Seven*) (7 × 5 = 35)

(a) Write down the synthesis of : Chloroquine and Miconazole.

(b) Discuss the SAR of quinolones.

(c) Classify the antifungal drugs with example.

(d) Discuss mechanism of action of penicillin.

(e) Classify anti–TB drugs with example and structures.

(f) Discuss the SAR of 8–aminoquinolines.

(g) Write down in brief the mechanism of action of the following classes of antibiotics : Aminoglycosides, Tetracyclines, Macrolides.

(h) Discuss the SAR of chloramphenicol with its stereochemistry.

(i) Classify antiviral agents with example.

3. Long answers (Answer any *Two*) (2 × 10 = 20)

(a) Discuss the SAR and mechanism of action of sulphonamides.

(b) Write a note on the various approaches used in drug design. What are the different parameters of QSAR analysis? Classify with example.

(c) Classify cephalosporin with example. Discuss the SAR of cephalosporin in details.