Exam Date & Time: 02-Dec-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

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 class of drugs act as inverse agonist

1)	H1-antihistamines		2)	Carbonic anhydrase inhibitors		3)	Calcium channel blockers		4)	Proton pump inhibitors		(1)

2) Which of the following H1 antihistamine can exist in E and Z isomers

1)	Diphenhydramine		2)	Cetirizine		3)	Triprolidine		4)	Omeprazole		(1)

3) Which of the following drug is optically active

1)	Cyproheptadine		2)	Cyclizine		3)	Omeprazole		4)	Triprolidine		(1)

4) Phenyl ring at fourth position of 1,4-dihydropyridine antianginals should preferably have ortho or meta substituents

1)	Required for binding to the receptor		2)	To increase metabolic stability		3)	To maintain non-coplanarity		4)	To improve selectivity		(1)

5) Which of the following drug has a thiadiazole ring system

1)	Furosemide		2)	Methazolamide		3)	Chlorothiazide		4)	Ethacrynic acid		(1)

6) Which among the following is a prodrug which acts by PPAR-α mediated activation of lipoprotein lipase.

1)	Lovastatin		2)	Simvastatin		3)	Clofibrate		4)	Metformin		(1)

7) Which among the following antiarrhythmic drug is a benzofuran derivative

1)	Sotalol		2)	Lorcainide		3)	Mexiletine		4)	Amiodarone		(1)

8) Which among the following antidiabetic drugs is an antihyperglycemic agent but not a hypoglycemic agent

(1)

1)	Metformin		2)	Tolbutamide		3)	Repaglinide		4)	Glipizide	

9) Which of the following heterocyclic ring system is present in pioglitazone

(1)

1)	Oxazolones		2)	Imidazolidine-2,4-dione		3)	Thiazolidine-2,4-dione		4)	Benzofuran	

10) Which among the following insulin preparation involves replacement of Chain B 30th amino acid with a C14- fatty acid chain.

(1)

1)	Glargine		2)	Aspart		3)	Lispro		4)	Detemir	

11) Most useful alkylating agent currently available

(1)

1)	Mephalan		2)	cyclophopamide		3)	Lomustine		4)	Thiotepa	

12) Alkylating agent alkylate at 7 position of

(1)

1)	Thymidine		2)	Cytosine		3)	Guanine		4)	Adenine	

13) The active metabolite of Azathioprine is

(1)

1)	6-Mercptopurine		2)	6-Thioglycolic acid		3)	6-Thioinosinic acid		4)	both a & b	

14) Which of the following drug has got tetrazole nucleus

(1)

1)	Clonidine		2)	,Hydralazine		3)	Timolol		4)	Losartan	

15) Methimazole is used for

(1)

1)	Hyperthiroidism		2)	Hypothyroidism		3)	Heart burn		4)	None of the above	

16) Which is a natural steroid

(1)

1)	Oestradiol .		2)	Testosterone		3)	Betamethasone		4)	Halotestin	

17) An Example for oral contraceptive agent

(1)

1)	Hydrocortisone		2)	Betamethasone		3)	Predinisolone		4)	Mifepristone .	

18) Which of the following drug comes under the category of indanediones anticoagulant .

(1)

1)	Phenindione		2)	Chlorindione		3)	Anisindione		4)	Menadione	

19) Prilocaine is an example of

(1)

1)	Benzoic acid		2)	Amino benzoic		3)	Anilide derivative		4)	Amide derivative	

	derivative			acid derivative								

20) Which is a natural CHF agent (1)

1)	Etoposide	2)	Vincristine	3)	Taxol	4)	Digitoxin

II Long Answers

Answer all the questions.

1) Discuss the general SAR features of H1 antihistamines (4)

A)

B) Outline the synthesis of any one H2 antihistamine (2.5)

C) Explain how nitrovasodialators produce smooth muscle relaxation and write the synthesis of glyceryl trinitrate (3.5)

2) Classify steroid hormones giving one structure from each class and explain the stereochemistry of steroids and outline the method of synthesis of warfarin (10)

III Short Answers

Answer all the questions.

1) Classify diuretics giving one structure from each class and explain Why hydrochlorthiazide is more potent than chlorthiazide? (5)

2) Explain the cardiac electrophysiology and give the IUPAC Name synthesis and uses of Disopyramide (5)

3) Explain the structural features of statins responsible for inhibiting HMG-CoA reductase enzyme and discuss the SAR of sulfonylureas as hypoglycaemic agents (5)

4) Write the IUPAC name and synthesis of tolbutamide (2.5)

A)

B) Outline the method of synthesis of Procaine (2.5)

5) What are antihypertensives.? Classify them giving the structure of one agent from each class and explain the mechanism of action of ACE inhibitors (5)

6) Classify antimetabolites giving the structure of one agent from each class and discuss the mechanism of action of Doxorubicin (5)

7) Write the structure and uses of Dibucaine, Mepivacaine,Tezosentan,Menadione (5)

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