



ARKAJAIN
University
Jharkhand

5th Semester Examination -2021-22

Subject : Medicinal Chemistry-II
Course : B. Pharmacy
Full Marks : 75

Roll No:

Time: 3 Hours.

Instructions to the Candidates:

- Read the question paper very carefully.
- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into Three Parts –A, B & C.
- Part-A is containing 20 multiple choice questions or objective type Questions.
- Part- B containing THREE questions out of which TWO questions are to be answered.
- Part C containing NINE questions out of which SEVEN questions are to be answered.
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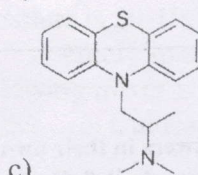
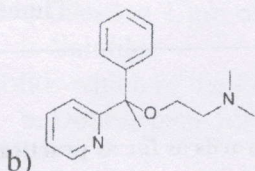
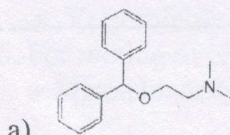
PART A

MULTIPLE CHOICE QUESTIONS

(20x1=20)

1. Which of the following drug is not a 1st generation sulfonyl urea derivatives?
a) Chlorpropamide b) Tolbutamide c) Acetohexamide d) Glimepir
2. Type-2 (NIDDM) is treatment by which types of drugs?
a) Insulin injection b) Oral hypoglycemic agent c) Both a and b d) None of these
3. The given IUPAC name N,N dimethyl biguanides of _____?
a) Metformin b) Glipizide c) Chlorpropamide d) Acarbose
4. Calcium channel blocker most likely to affect myocardial contractibility AV conduction is?
a) Diltiazem b) Bepridil c) Nicardipine d) Nitrendipine
5. The name 2-(Diphenylamino)ethyl-p-aminobenzoate is the nomenclature of which local anesthetic drug?
a) Procaine b) Benzocaine c) Lignocaine d) Piperocaine
6. Prothrombin and thromboplastin in presence of oplastin will give _____?
a) Thrombin b) Heparin c) Warfarin d) Menadione
7. Which of the following is a precursor of nitroglycerine synthesis?
a) Glycerol b) Glycol c) Glucose d) Glucitol
8. The reaction of p-nitobenzoic acid with ethyl alcohol give intermediate that on reduction give which local anesthetic compound?
a) Procaine b) Piperocaine c) Lignocaine d) Benzocaine
9. What is an arrhythmia?
a) Acelerated heart beat b) Slow heart beat c) Irregular heart beat d) A type of heart chance
10. Glyceryl trinitrate is _____?
a) Aspirin b) Nintroglycerine c) Nicorandil d) Propranolol
11. The NPH comes under which class of insulin ?
a) Short acting b) Intermediate acting c) Long acting d) ultra-long acting
12. Which of the following histamine receptor increases the release of gastric acid?
a) H1 receptor b) H2 receptor c) H3 receptor d) H4 Receptor

13. . Pharmacological action associated with calcium channel blockers that tend to diminish angina?
 a) Increase heart rate b) Decrease myocardial wall tension c) Decrease preload d) None of these
14. . Cardiotonics drugs are used in ____?
 a) Atrial flutter b) Atrial fibrillation c) CHF d) All of these
15. Which of the following is not a voltage gated Na⁺ channel blocker?
 a) Quinidine b) Lidocaine c) Phenytoin sodium d) Verapamil
16. Which of the following drug is not a 1st generation antihistamines?
 a) Aminoalkyl ether b) Azole derivatives c) Piperazines d) Ethyldiamines
17. Which of the following is a structure of diphenhydramine?



- d) None of these
18. Causes of myocardial ischemia is ____?
 a) Coronary vessels atherosclerosis b) Arterial thrombi c) coronary vasospasm d) All of these
19. Rosiglitazone is containing which heterocycle in its structure?
 a) Imidazolidine b) Pyrazolinone c) Thiazolidinedione d) Pyranone
20. Thiotepa is used as a ____ drug?
 a) Anti cancer b) Anti-arrhythmic c) Anti diabetic d) Anti hypertensive

PART B

ANSWER ANY TWO OUT OF THREE

(2x10=20)

1. What is neoplasm? Classify the antineoplastic agents? write the structure, chemical name and uses of any two drugs?
2. Write details Nomenclature and stereochemistry of steroids? write structure, mechanism of action, SAR and uses of testosterone?
3. Classify local anesthetic agents and discuss SAR of ester and amide class of local anaesthetic agents with suitable example?

PART C

ANSWER ANY SEVEN OUT OF NINE

(7x5=35)

1. Write note on Anti-hyperlipidemic agents?
2. Write short note Coagulant and anticoagulant ?
3. Write note on thyroid and antithyroid drug ?
4. Describe the drugs used in the treatment of CHF?
5. Write note on digitoxin ?
6. Write note on Procaine ?
7. Write the structure, synthesis and uses of Mecaptopurine ?
8. Write the structure, synthesis and uses of Promethazine?
9. Write note on drug used for oral contraceptive ?



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PART A

MULTIPLE CHOICE QUESTIONS

(20x1=20)

1. Digitalis acts by
 - a. Inhibiting Na⁺K⁺ATPase pump.
 - b. Inhibiting Ryanodine receptor calcium channel 2
 - c. Inhibiting NCX-antiporter
 - d. Inhibiting SERCA2
2. Drugs for PSVT are
 - a. Esmolol, Amiodarone
 - b. Adenosine, Digoxin
 - c. Lidocaine, Verapamil
 - d. Disopyramide, Flecainide
3. Goserelin is
 - a. Enhance prolactin release
 - b. Inhibit prolactin release
 - c. Superactive GnRH
 - d. Inhibit GH release
4. Which of the following drug used in gout act by converting uric acid into allantoin?
 - a. Colchicine
 - b. Probenecid
 - c. Pegloticase
 - d. Febuxostat
5. Iron chelating agent is
 - a. Dimercaprol
 - b. Desferrioxamine
 - c. Pencillamine
 - d. EDTA
6. Which of the following is Fibrinolytic drug?
 - a. Warfarin
 - b. Alteplase
 - c. Menotropin
 - d. Clopidogrel
7. Drugs inhibit thyroid hormone synthesis
 - a. Methimazole
 - b. Bromocriptine
 - c. Octreotide
 - d. Cabergoline
8. Epsilon amino-caproic acid is
 - a. Anti-coagulant
 - b. Antiplatelet drugs
 - c. Antifibrinolytic drugs
 - d. Diuretics
9. Renal epithelial Na⁺ channel inhibitor is
 - a. Acetazolamide
 - b. Triamterene
 - c. Mannitol
 - d. Chlorthalidone

10. Vasopressin antagonist is
 - a. Tolvaptan
 - b. Amiloride
 - c. Carbamazepine
 - d. Lypressin
11. Glycoprotein IIb/IIIa receptor antagonist is
 - a. Abciximab
 - b. Tranexamic acid
 - c. Dipyridamole
 - d. Ticlopidine
12. Thiazide and related diuretics
 - a. Na⁺-K⁺-2Cl⁻ cotransport inhibitors
 - b. Carbonic anhydrase inhibitors
 - c. Na⁺-Cl⁻ symport inhibitors
 - d. Potassium sparing agents
13. Protamine sulphate is
 - a. COX-2 inhibitor
 - b. Opioid antagonist
 - c. Heparin antagonist
 - d. Calcium channel blocker
14. Sitagliptin is
 - a. AMP_k activator
 - b. SGLT-2 inhibitor
 - c. DPP-4 inhibitor
 - d. K_{ATP} channel blocker
15. Calcium channel blocker is
 - a. Diuretics
 - b. Captopril
 - c. Losartan
 - d. Diltiazem
16. Drug blocks an enzyme needed for the synthesis of cholesterol
 - a. Statin
 - b. Thiazide
 - c. Beta blocker
 - d. ACE inhibitor
17. Drug that causes severe dry cough
 - a. Atenolol
 - b. Amlodipine
 - c. Enalapril
 - d. Heparin
18. 5-LOX inhibitor is
 - a. Abciximab
 - b. Zileuton
 - c. Esmolol
 - d. Tolvaptan
19. Selective 5-HT_{1D/1B} agonists is
 - a. Celecoxib
 - b. Indomethacin
 - c. Quinidine
 - d. Sumatriptan
20. Neprilysin inhibitor is
 - a. Adenosine
 - b. Sacubitril
 - c. Verapamil
 - d. Dopamine

PART B

ANSWER ANY TWO OUT OF THREE

(2x10=20)

1. Define Hypertension. Classify Anti-Hypertensive drugs & write notes on drugs affecting RAAS.
2. Define diuretics. Classify Diuretic drugs & write notes on pharmacodynamic & pharmacokinetics of Loop diuretics.
3. Classify Oral Antidiabetic drugs & write mechanism of action of Sulfonylureas and Dipeptidyl peptidase-4 (DPP-4) inhibitors.

PART C

ANSWER ANY SEVEN OUT OF NINE

(7x5=35)

1. Write mechanism of action of oral anticoagulant.
2. Write notes on Anti-Diuretic Hormone.
3. Write notes on Calcium-channel blocker.
4. Write classification of Anti-anginal drugs & M.O.A. of Nitrates.
5. Write classification of Antiarrhythmic drugs and Mechanism of action of each class.
6. Write notes on Fibrinolytic drugs.
7. Write notes on Anti-platelet drugs.
8. Write synthesis, storage and secretion of thyroid hormone.
9. Write notes on hormone affecting calcium balance and mechanism of action of bisphosphonates.



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PART A

MULTIPLE CHOICE QUESTIONS

(20x1=20)

1. What will happen on injecting hypotonic solution to blood stream.
a. Sickle cell anaemia b. Crenulation c. Haemolysis d. None of the above
2. Which among the following tests is not meant for evaluation of aerosol
a. Leak test b. Delivery Rate test c. Flammability test d. Friability test
3. Aerosols are
a. Pressurised solid dosage form b. Pressurised liquid dosage form
c. Pressurised gaseous dosage form d. None of the above
4. Which among the following container is hermitically sealed
a. Vial b. Ampoule c. Bottle d. None of the above
5. The ampoules are sealed by which of the following techniques
a. Drag sealing b. Push sealing c. Pull sealing d. None of the above
6. Pyrogens are
a. Lipo-phosphoric polysaccharide b. Lipo-phosphoric monosaccharide
c. Lipo-phosphoric disaccharide d. None of the above
7. Which among these is not meant for pyrogen test
a. Sham test b. LAL test c. Dilution test d. None of above
8. For LAL test which among the following animal is used
a. Rabbit b. Rat c. Guainía pig d. Horseshoe crab
9. Which among the microorganisms generally produces Pyrogens
a. Fungi b. Gram positive bacteria c. Gram negative bacteria d. None of the above
10. Pyrogens are
a. Thermolabile b. Thermostable c. Thermostatic d. None of the above
11. 5000 capsules can be filled per hour manually with a bed of holes of
a. 300 b. 400 c. 700 d. 200

12. Which of the following methods is slugging
 a. Wet granulation b. Dry granulation c. Direct compression d. None of above
13. Which of the following instruments is used for determination of ability of tablets to resist abrasion in packing
 a. Monsanto hardness tester b. Disintegration test apparatus c. Fibrialator d. Twin-shell blender
14. Powders showing excellent flow property if angle of repose is
 a. $<25^\circ$ b. $>25^\circ$ c. 25° d. None of above
15. If ml of solvent required to dissolve 1 gm of solute is 30-100 ml then degree of solubility is
 a. Very soluble b. Soluble c. Freely soluble d. Sparingly soluble
16. For mixing of cohesive solids which of the following mixer is suitable
 a. Sigma blade blender b. Double cone blender c. Cubical blender d. Cylindrical blender
17. pKa can be determined by which of the following methods
 a. Drop count method b. Potentiometric Titration c. Shake flask method d. Karl Fischer Titration
18. Misalignment of cap and body leads to the capsule body splits and a portion of it covers the cap is called as
 a. Blooming b. Telescoping c. Cracking d. Creaming
19. Which of the following is a natural universally accepted wetting agent for oils to load with a soft gel
 a. Soya lecithin b. Casein c. Pectin d. None of above
20. Which of the following method is suitable for making the product pyrogen free.
 a. Heating with strong alkali and oxidizing solution b. RO treatment
 c. Treated with ion exchange resin d. All above

PART B

ANSWER ANY TWO OUT OF THREE

(2x10=20)

1. Briefly discuss objectives and various physical properties how help in comprehensive understanding of pre-formulation studies.
2. Briefly discuss the formulation of tablets and various manufacturing defects in tablets.
3. Discuss the advantage, disadvantage, most desirable characteristics of parenteral preparations, its formulation and processing.

PART C

ANSWER ANY SEVEN OUT OF NINE

(7x5=35)

1. Write a note on Disintegration test of tablets.
2. Write a note on Sham test.
3. How to overcome difficulties while filling hygroscopic powders to hard gelatin capsule shell.
4. Write a note on Sterile Water for Injection and Bacteriostatic Sterile Water for Injection.
5. Write a note on types of sealing techniques of ampoules.
6. Write a note on Leak test for parenteral.
7. Write a note on Slugging.
8. Write a note on sterilization of dextrose solution.
9. Write a note on Pyrogen.