

S. Y. B. Pharm

Semester Exam **IV**

Academic Year 2022-23

MAY 2023

S. No.	Topic	Hours
1	<p>Experiments</p> <p>(a) Plot Response Curve (R/C) of any agonist and Antagonist using a suitable potent ligand preparation.</p> <p>(b) In vitro a simulated model using rabbit eye mounted on a wooden board and a filter to observe the effect of drug solution to be used. Detail dilution for preparation of infusion solution. In vitro model of constriction of eye using 0.1% solution over a given period (time) * indicate amount of drug used.</p> <p>For full text visit www.bionline.com</p>	3
2	<p>Demonstration</p> <p>(a) Effect of drug on isolated frog heart (O.D. of solution)</p> <p>- Arterial Acetylcholine</p> <p>- Arginine Proxanolol</p> <p>- Effect of excess of calcium and potassium on frog heart</p> <p>- Effect of lack of Ca⁺⁺ on isolated heart</p> <p>- Effect of digitalis on hypodynamic heart</p> <p>(b) Stimulated experiment (O.D.) Experiments</p> <p>- effect of drug on eye</p> <p>- effect of drug on GI motility</p> <p>(c) Demonstration with the help of CD - body temp. or recordings</p>	3

Time: 3 hours

Marks: 75

Q. 1 Attempt all multiple-choice questions
(MCQ)

20M

1 Gastric acidifiers are the drugs which are used to -----the acidity

- a Decrease
- b Increase
- c Stop
- d None of these

2 In limit test of chloride _____ is added to get precipitate.

- a AgNO_3
- b BaCl_2
- c BaSO_4
- d $\text{HSCH}_2 \text{CO}_2 \text{H}$

3 The first Indian Pharmacopoeia was published in year

- a 1955
- b 1975
- c 1950
- d 1963

4 _____ is the indicator used for assay of ammonium chloride

- a Phenolphthalein
- b Mordant Black II
- c Starch
- d KMnO_4

- 5 The _____ class of compounds act by stimulating the flow of respiratory track secretions
- a expectorant
 - b Emetics
 - c antidote
 - d astringent
- 6 Which of the following are used in the study of thyroid function
- a Phosphorus-32
 - b Cobalt-60
 - c Iodine-131
 - d Yttrium-90
- 7 Sodium Fluoride is an
- a Antacid
 - b Anticaries agent
 - c Antiemetic
 - d Astringent
- 8 Limit test of arsenic is based on the reaction of arsenic gas with hydrogen ions to form _____ stain on mercuric chloride paper in presence of KI
- a Yellow
 - b Purple
 - c Red
 - d Green
- 9 _____ for treatment of anamia.
- a Copper sulphate
 - b Ferrous gluconate
 - c Sodium thiosulphate
 - d Ammonium chloride

- 10 Role of alcohol in limit test of sulphate is to prevent _____
- a solubilization
 - b Turbidity
 - c Purple colour formation
 - d Supersaturation
- 11 The species which have different atomic mass number but same atomic number is called
- a Isobars
 - b Isotopes
 - c Isomers
 - d Nuclide
- 12 Light kaolin is
- a Purified natural hydrated aluminium silicate
 - b Native hydrated aluminum silicate
 - c Purified natural hydrated aluminium trisilicate
 - d Native hydrated aluminum trisilicate
- 13 What is the chemical formula of Calcium Carbonate
- a CaCo_3
 - b Ca_2CO_3
 - c CaCO_2
 - d Ca_2O_3
- 14 Which of the following is a physiological buffer system?
- a Boric acid/ Sodium borate
 - b Ammonia/ NH_4Cl
 - c Haemoglobin
 - d acetic acid/sodium acetate.

- 15 Zinc sulphate is an _____
- a antidote
 - b expectorant
 - c antacid
 - d astringent
- 16 Which of the following is an emetic as well as used in the treatment of phosphorous poisoning
- a Sodium thiosulphate
 - b Ammonium chloride
 - c Copper sulphate
 - d Hydrochloric acid
- 17 The neutralizing capacity of an antacid is expressed in
- a Miliequivalents of HCl
 - b ppm
 - c ml
 - d mg
- 18 In limit test of iron citric acid does not allow precipitation of iron with _____
- a Ammonia
 - b Thioglycollic acid
 - c Formaldehyde
 - d Barium Sulphate
- 19 The Molecular formula for sodium orthophosphate is
- a Na_2PO_4
 - b NaHPO_4
 - c Na_2HPO_4
 - d Na_2OPO_4

20 Potassium deficit < 3.5 mEq/L is known

- a Hypokalemia
- b Hypocalcemia
- c Hypernatremia
- d Hypercalcemia

Q 2. Attempt any two questions out of three

[2 x 10M = 20M]

- 1 a) Discuss in brief various sources of Impurities in Pharmaceutical Substances 5M
- b) Write a note on Radiopharmaceuticals. 5M
- 2 a) What are cathartics? Classify cathartics based on mechanism and give its significance. 5M
- b) Discuss different theories of acids and bases with examples. Give Henderson Hassel Balch Equation. Explain terms involved in it. 5 M
- 3 a) Give Principle, reaction and procedure involved in the limit test of arsenic as per IP. 5M
- b) Write a note on Antacid Combination Therapy 5M

Q 3. Attempt any seven out of nine

[7 x 5 =35M]

- 1 Give Procedure, principle and reaction of Limit test for Chloride. 5M
- 2 Define Antidote and Write a note on Sodium Nitrite and Sodium thiosulphate as Antidote 5M
- 3 Give preparation, properties, uses and assay of Sodium Chloride 5M
- 4 Write a note on preparation, principle involved in the assay and uses of Ammonium Chloride 5M
- 5 Classify antacids and discuss in detail magnesium containing antacid 5M
- 6 Explain physiological role of Sodium, Phosphate. What are the conditions associated with imbalance of phosphate 5 M
- 7 Define Antimicrobials and Give Classification of antimicrobials based on Mechanism of action. 5M
- Elaborate on Hydrogen peroxide

8 What are dentifrices? Explain following terms with suitable examples: anticaries agent, dental desensitizers. 5M

9 [i] Match the following 3M

Column A

Ammonium Chloride

Bentonite

Sodium Chloride

Chlorinated Lime

Ferrous Sulphate

Sodium Bicarbonate

Column B

Protective and adsorbent

Haematinics

Antimicrobial

Acidifier

Electrolyte Replacement Therapy

Protective and adsorbent

[ii] Give category and method of preparation of Ferrous Sulphate 2M

Duration: 3 hours

Total marks: 75

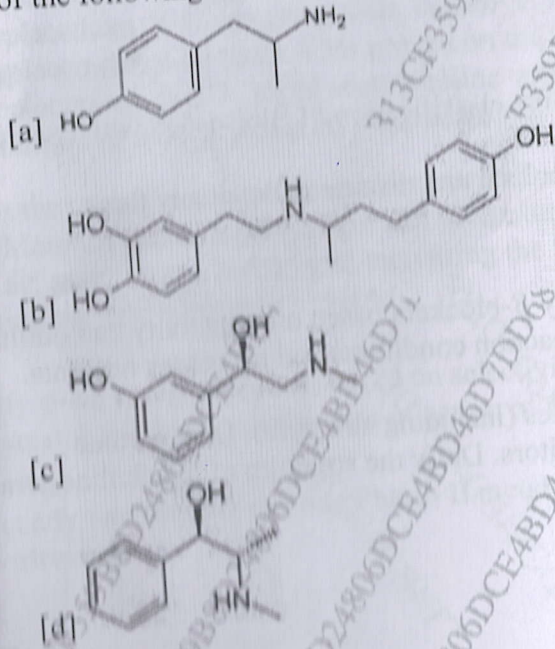
- N.B. : 1. All questions are compulsory.
2. Figures to right indicate full marks.

Q.1 Choose the appropriate option for following multiple choice-based questions. (20)
Each question carries one mark.

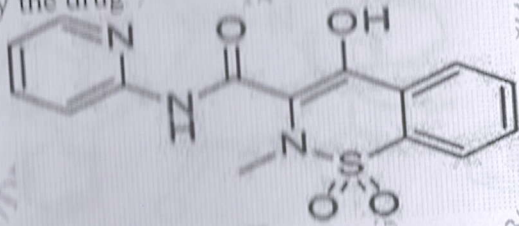
- 1 Following are the Phase I metabolism reactions except
[a] Hydrolysis of ester and amides
[b] Acetylation
[c] S-dealkylation
[d] Oxidation of olefins
- 2 Identify the triazole ring containing benzodiazepine from the following
[a] Chlordiazepoxide
[b] Diazepam
[c] Oxazepam
[d] Alprazolam
- 3 Which of the following drugs is NOT an imidazoline analog?
[a] Tolazoline
[b] Naphazoline
[c] Bitolterol
[d] Clonidine
- 4 Which of the following is structural isomer of enflurane
[a] Isoflurane
[b] Sevoflurane
[c] Ketamine
[d] Desflurane
- 5 Which is the active metabolite of tacrine?
[a] 1-hydroxy tacrine
[b] 2-hydroxy tacrine
[c] 3-hydroxy tacrine
[d] 4-hydroxy tacrine
- 6 In phenothiazine nucleus, which of the following substitution is responsible for tilting the amine side chain to produce neuroleptic activity?
[a] 1-Cl
[b] 2-Cl
[c] S-5
[d] N-10
- 7 Which of the following is active metabolite of thioridazine
[a] Mesoridazine
[b] N-desmethyl thioridazine
[c] 8-hydroxy-thioridazine
[d] O-glucuronide thioridazine

- 8 Trimethadone acts as an anticonvulsant by
 [a] inhibiting sodium channels
 [b] inhibiting calcium channels
 [c] inhibiting GABA metabolism
 [d] increasing GABA reuptake
- 9 Codeine is
 [a] 3-methoxy analogue of Morphine
 [b] 5-methoxy analogue of Morphine
 [c] 5-chloro analogue of Morphine
 [d] 3-bromo analogue of Morphine
- 10 Which of the following is incorrect statement about Indomethacin
 [a] It is used as analgesic and anti-inflammatory agent
 [b] It contains imidazole nucleus
 [c] It belongs to chemical class: Aryl and Heteroaryl acetic acids
 [d] Its use is limited because of frequent GI distress and potential drug interaction with Warfarin, furosemide and lithium.
- 11 Antiadrenergic drug Prazosin is structurally _____?
 [a] 4-amino-6,7-dimethoxyquinazoline ring system attached to a piperazine ring
 [b] 5-amino-6,7-dimethoxyquinazoline ring system attached to a piperazine ring
 [c] 4-amino-6,7-dimethoxyquinazoline ring system attached to a piperidine ring
 [d] 5-amino-6,7-dimethoxyquinazoline ring system attached to a piperidine ring
- 12 Which of the following is incorrect pair of NSAIDs
 [a] Salicylic acid derivative: Aspirin
 [b] Aryl and heteroaryl acids : Sulindac
 [c] Arylpropionic acid: Ibuprofen
 [d] Oxicams: Indomethacin
- 13 Which of the following is an example of flexible opioids
 [a] Naloxane
 [b] Fentanyl
 [c] Nalorphine
 [d] Levallorphan
- 14 Levorotatory form of Methorphan is
 [a] Levorphanol
 [b] Codeine
 [c] Methadone
 [d] Nalorphine
- 15 The prodrug which is metabolised to the sedative trichloroethanol is
 [a] Triclofos
 [b] Paraldehyde
 [c] Meprobamate
 [d] Ethchlorvynol

16 Which of the following is a mixed acting sympathomimetic agent?



17 Identify the drug



- [a] Piroxicam
- [b] indomethacin
- [c] Ketorolac
- [d] Naproxen

18 Name the typical antipsychotic which does not belong to the phenothiazine chemical class

- [a] Chlorpromazine
- [b] Chlorprothixen
- [c] Thioridazine
- [d] Triflupromazine

19 Ibuprofen is marketed as a racemic mixture, although biologic activity resides almost exclusively in the _____ isomer

- [a] S-(+)
- [b] R-(+)
- [c] S-(-)
- [d] Both R and S

20 Which of the following is an example of NSAIDs belonging to Indole Acetic acids?

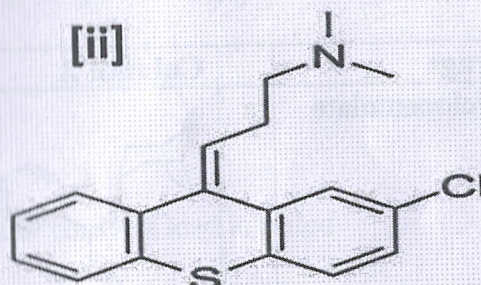
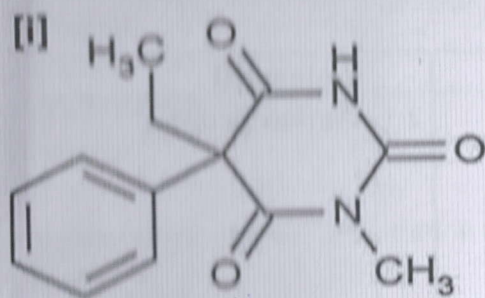
- [a] Naloxane
- [b] Aspirin
- [c] Ibuprofen
- [d] Indomethacin

1. Replacement of ethylene bridge with propylene bridge
2. Replacement of acetyl group with butanoyl group
3. Replacement of all three $-CH_3$ groups on the quaternary nitrogen with $-H$
4. Replacement of $-COCH_3$ of acetylcholine with $-CONH_2$
5. Addition of methyl group on β -carbon atom

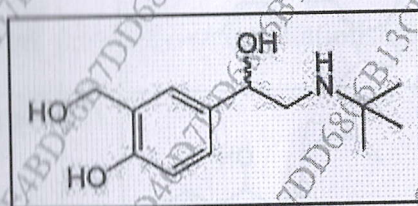
B Discuss the role of bioisosteric replacement in the development of anticonvulsant drugs. Mention the molecular target and give examples (name and structure) of drugs which act as anticonvulsants by a) increasing the biosynthesis of GABA and b) inhibiting the degradation of GABA. (5)

C Classify α -adrenergic blockers based on selectivity with suitable examples (including structures). Explain the mechanism of action of β -halo alkylamine derivatives. (5)

D Predict any two Phase-I and one Phase- II metabolites for each of the following (draw structures) (5)



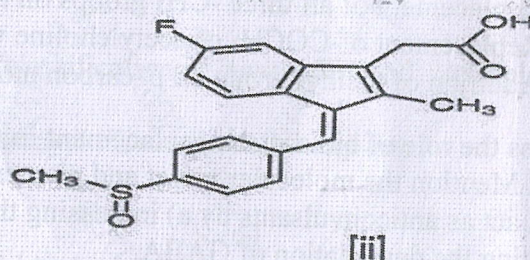
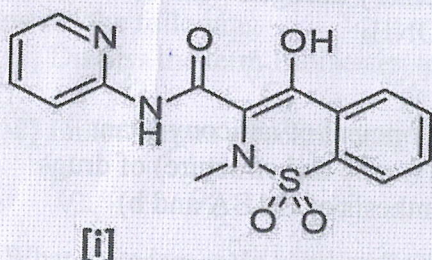
E Identify the following drug, indicate its mechanistic class. Which enantiomer is more active? Outline the synthesis of given drug, along with reaction conditions and necessary reagents. (5)



F Classify general anaesthetics with one example from each class. [Draw structures]. Discuss metabolism of halothane. (5)

G Describe the structural features of Zolpidem responsible for α_1 selective GABA_A agonistic activity. Comment on its duration of action and therapeutic use. Depict the scheme for synthesis of Diazepam and indicate the reagents used. (5)

H With respect to the following structure, answer the questions given below (5)



- [a] Identify the NSAID [i] & [ii]
 [b] Name the chemical class of [i]
 [c] Identify which of the above structures is a prodrug and give its name and active form structure

I Match the following anticholinergic agents with respect to their chemical class and structure. (5)

	Drugs		Column A		Column B
1	Cyclopentolate	a		i	Amino alcohol
2	Benztropine mesylate	b		ii	Amino amides
3	Biperidine HCl	c		iii	Amino alcohol ether
4	Isopropamide	d		iv	Ester of bicyclic amino alcohol
5	Homatropine	e		v	Amino alcohol ester

Time : 3 Hrs.

Marks:75

Question – I

1x20

- 1 Magnesia Magma exhibits
 - a Antithixotropy
 - b Thixotropy
 - c show spur in the rheogram
 - d Rheopexy
- 2 Reciprocal of viscosity is known as:
 - a fluidity
 - b mobility
 - c reduced viscosity
 - d resistance
- 3 A plot of shear rate, as a function of shear stress is called
 - a Rheogram
 - b Standard Plot
 - c Humidity Chart
 - d Histogram
- 4 Progressive, permanent deformation under constant load is called
 - a Creep
 - b Plastic deformation
 - c Elastic deformation
 - d Fragmentation
- 5 During elastic deformation, the stress–strain relationship for a specimen is described by
 - a Hooke's law
 - b Boyle's law
 - c Beer Lambert's law
 - d Charle's law
- 6 The extent of sedimentation is quantitatively expressed by _____.
 - a Degree of deflocculation
 - b Sedimentation volume
 - c Sedimentation rate
 - d Sedimentation mass
- 7 Dispersed particles in the colloidal dispersions usually have the particle size ranging from
 - a 1nm to 1 μm
 - b 2 μm to 4 μm
 - c 5 μm to 6 μm
 - d 6 μm to 7 μm

- 8is concentration of globules at the top or bottom of the emulsion
- a Coalescence
 - b Creaming
 - c Breaking
 - d Phase inversion
- 9 Which of the following statement is correct
- a Lyophilic colloids are usually moderately thermodynamically unstable
 - b Lyophilic colloids are usually thermodynamically stable
 - C Lyophilic colloids are usually slightly thermodynamically unstable
 - d Lyophilic colloids are usually highly thermodynamically unstable
- 10 Which of the following is a correct sentence about emulsions
- a All emulsions are heterogeneous systems
 - b Some emulsions are homogeneous systems
 - c All emulsions are homogeneous systems
 - d Some emulsions are heterogeneous systems
- 11 Emulsions can be stabilized by
- a electrostatic repulsion between the droplets
 - b electrostatic attraction between the droplets
 - C aggregation of droplets
 - d precipitation of droplets
- 12 Which of the following is a correct sentence
- a Creaming is an irreversible process
 - b Creaming is a reversible process
 - C Breaking is a reversible process
 - d The cream floccules cannot be easily redispersed.
- 13 During the Brownian motion
- a the velocity of the particles increases with the decrease in particle size
 - b the velocity of the particles decreases with the decrease in particle size
 - c the velocity of the particles increases with the increase in particle size
 - d the velocity of the particles is not affected by the increase in particle size
14. Hausner ratio is
- a. Tapped density / Bulk density
 - b. Bulk density / Tapped density
 - c. Bulk volume / Tapped volume
 - d. Tapped volume / Bulk volume

15. Porosity is expressed in

- a. Percentage
- b. Millimeter
- c. Gram/Millimeter
- d. Newton

16. The criterion to call a system 'colloid' is

- a. a fine state of subdivision of dispersed phase
- b. dispersed particles are in the size range of 1 nm to 1 μm
- c. interface is very extensive
- d. the presence of dispersed phase in a dispersion medium

17. Which of the following is the half life of Second order reaction

- a. $t_{1/2} = 1/ak$
- b. $t_{1/2} = 0.693/k$
- c. $t_{1/2} = A_0/2k$
- d. $t_{1/2} = A_0/2k$

18. According to ICH guidelines, climate zone IV is

- a. Hot/humid climate
- b. Hot/dry climate
- c. Subtropical and Mediterranean climate
- d. Moderate climate

19. The effect of temperature on rate of reaction is explained by

- a. Arrhenius equation
- b. Nernst equation
- c. Noyes whitney equation
- d. Fick's law

20. The time required for the complete degradation of a drug in solution is a finite value. The order of that reaction is:

- A. first
- B. pseudo first
- C. second
- D. zero

Q.II Long Answer Questions (Answer any two)**2x10**

1. Discuss creaming & coalescence. Describe the factors for improving physical stability of emulsions (10M)
2. (A) Write a note on Normal distribution curve of powders.
(B) Enlist the methods used for determining particle size? Explain in detail any two.
3. (A). Discuss any two chemical degradation pathways
(B). The half life of drug which decomposes according first order kinetics is 95 days. Calculate shelf life and k.

Q.III Short Answer Questions (Answer any seven)**7x5**

1. Describe the optical properties of colloids.
2. Differentiate between flocculated and deflocculated suspensions.
3. Write a short note on sedimentation volume observed in suspensions.
4. What is a protective colloid and give the significance of gold number.
5. Describe principle, construction (labelled diagram) and working of Ostwald's viscometer.
6. Describe the mechanical behaviour of solids in terms of stress- strain relationship.
7. What are the limitations of accelerated stability studies?
8. What is micromeritics. Discuss its importance in pharmacy.
9. Explain using formula, three ways of measuring flow properties

Duration: 3 Hrs

Total marks: 75

- N.B. : 1. All questions are compulsory
2. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) (Answer all the questions). 20

1. The advantages of oral route include _____.
- a. It can be given to unconscious patient
 - b. Medicament needs to be sterile
 - c. It is noninvasive
 - d. It is expensive

2. Agonist is _____.
- a. An agent which activates a receptor to reduce submaximal effect but antagonizes the action of a full agonist
 - b. An agent which prevents the action of an agonist on a receptor or the subsequent response, but does not have any effect of its own
 - c. An agent which activates a receptor to produce an effect in the opposite direction to that of the agonist
 - d. An agent which activates a receptor to produce an effect similar to that of the physiological signal molecule

3. The extent of separation of DRCs of a drug for different effects is a measure of its _____.

- a. Safety
- b. Potency
- c. Therapeutic effect
- d. Selectivity

4. The receptor that mediates its action in milliseconds is _____.

- a. Ion channel receptors
- b. GPCR
- c. Transmembrane enzyme-linked receptor
- d. Receptors regulating gene expression

5. Prazosin is a _____.

- a. Alpha 2 selective blocker
- b. Beta 1 selective blocker
- c. Alpha 1 selective blocker
- d. Nonselective blocker

6. Which of the following statement is correct for Atropine?

- a. It produces miosis
- b. It is safer in elderly males
- c. It is used in the treatment of Glaucoma
- d. It is the specific antidote for anti-ChE poisoning

7. The _____ is a preanesthetic medicine

- a. Opioids
- b. Antipsychotics
- c. Antidiarrhoeal
- d. Antiepileptics

8. The mechanism of disulfiram is _____.

- a. Aldehyde dehydrogenase inhibitor
- b. Aldehyde dehydrogenase inducer
- c. Alcohol dehydrogenase inhibitor
- d. Alcohol dehydrogenase inducer

9. The _____ drug is preferred in treatment of mania
 a. Moclobomide
 c. Lidocaine
 b. Propranolol
 d. Lithium
10. The only neuroprotective agent useful in treatment of Parkinson's disease is _____
 a. Monoamine oxidase inhibitor
 c. Catechol O methyl transfer inhibitor
 b. Monoamine oxidase B inhibitor
 d. Dopa decarboxylase inhibitor
11. The transport that carries a solute across the membrane against its concentration gradient is _____
 a. Facilitated diffusion
 c. Passive diffusion
 b. Active transport
 d. Filtration
12. Alteration of the action of one drug at the target site by another drug, independent of a change in its concentration is called as _____
 a. Pharmacokinetic interaction
 c. Pharmacodynamic interaction
 b. Tachyphylaxis
 d. Adverse drug reaction
13. At the muscle end-plate, d-tubocurarine reduces the:
 a. Number of Na⁺ channels
 b. Duration for which the Na⁺ channels remain open
 c. Ion conductance of the open Na⁺ channel
 d. Frequency of Na⁺ channel opening
14. Monoamine oxidase exerts _____ side effect
 a. Serotonin syndrome
 c. Brain zaps
 b. Wine reaction
 d. Postural hypotension
15. Buspirone acts mainly acts on _____ receptor
 a. 5HT
 c. Adrenaline
 b. GABA
 d. Dopamine
16. This class of drugs specifically stimulate respiration.
 a. Convulsants
 c. Analeptics
 b. Psychostimulants
 d. Cerebroactive drugs
17. An example of Phase II reaction is _____
 a. Cyclization
 c. Hydrolysis
 b. Glucuronide conjugation
 d. Reduction
18. An unwanted effect of a drug that occurs at therapeutic dose is called _____
 a. Intolerance
 c. Toxic effect
 b. Secondary effect
 d. Side effect
19. Ethanol is used in methanol poisoning because it _____
 a. Antagonises the actions of methanol
 b. Stimulates the metabolism of methanol and reduces its blood level
 c. Inhibits the metabolism of methanol and generation of toxic metabolite
 d. Replenishes the folate stores depleted by methanol

20. Field block anesthesia is a _____ type of local anesthetic technique
- a. Infiltration anesthesia
 - b. Surface anesthesia
 - c. Conduction block anesthesia
 - d. Spinal anesthesia

2. Long Answers (Answer 2 out of 3)

- A. What are the different principles of drug action? Explain the signal transduction mechanism for transmembrane enzyme linked and JAK-STAT binding receptors. 20
- B. Define sympathomimetics. Classify them and add a detailed note on the pharmacology of Adrenaline.
- C. Classify antiepileptics. Discuss in detail mechanism and adverse effect of phenytoin and valproic acid

3. Short Answers (Answer 7 out of 9)

- A. What is excretion? Explain the renal excretion in detail. 35
- B. Enlist various factors modifying drug actions. Explain any two in detail.
- C. Write a note on receptor antagonism.
- D. Discuss the mechanism of action, uses, and side effects of Beta blockers
- E. Classify local anesthetics. Discuss its mechanism of action.
- F. Discuss the factors governing the induction and recovery of volatile anesthetics
- G. Compare and contrast between benzodiazepines and barbiturates.
- H. Discuss the pharmacological actions of Morphine.
- I. Give an account of anticholinesterase in treatment of Alzheimer's disease

Total marks: 75

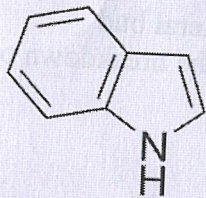
Duration: 3 hours

- N.B.: 1. Answer all questions sequentially.
2. Figures to right indicate full marks.

Q. 1 Choose appropriate option for following multiple choice questions. 20

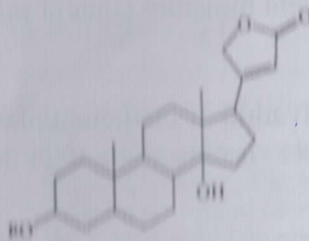
1. Classification based on protein content is called
 - a Taxonomical Classification
 - b Morphological classification
 - c Chemical classification
 - d Serotaxonomical classification
2. The gum which contains oxidase enzyme is
 - a Tragacanth
 - b Honey
 - c Acaela
 - d Agar
3. Ash value is done in order to determine
 - a Inorganic contaminants
 - b Organic contaminants
 - c Microbial contaminants
 - d Pesticidal contaminants
4. Vein islet number is
 - a Total number of vein islets beneath each epidermal cell
 - b Total number of vein islets beneath mesophyll
 - c Total number of vein islets in 1mm^2 of epidermal cells.
 - d Average number of vein islets beneath four continuous epidermal cells
5. Multiplication of entire chromosome set alters the quality of crude drugs produced with a change in the active constituents in the process of _____.
 - a Polyploidy
 - b Mutation
 - c Chemodemes
 - d Hybridization
6. The natural plant growth regulator useful in promoting lateral bud development and inhibition of senescence by preventing the breakdown of chlorophyll in leaves are _____.
 - a Auxins
 - b Gibberellins
 - c Cytokinins
 - d Abscissic acid

- 7 The method of collection of heartwood from the plant
a Ploughing and uprooting
b Plucking and stripping
c Felling and cutting
d Tapping
- 8 The protection and conservation of species in their natural habitat called as _____
a In-situ conservation
b Ex-situ conservation
c Off-site conservation
d No conservation
- 9 Which of the following is Indole derivative?
a Cytokinins
b Abscisic acid
c Auxins
d Gibberellins
- 10 In plant tissue culture, the callus can be differentiated into a complete plantlet by altering the concentration of _____
a Sugars
b Hormones
c Amino Acids
d Vitamins and minerals
- 11 Part of the plant used for sub culturing in tissue culture is called as
a Explant
b Callus
c Hormone
d Stock
- 12 Panchmahabhutha and Tridosha theory is related to
a Homeopathy
b Unani
c Ayurveda
d Chinese
- 13 Identify the class of compound from the given basic nucleus



- a Tropane Alkaloids
b Indole Alkaloids
c Quinoline Alkaloids
d Cardiac Glycosides

- 14 Identify the class of compound from the given basic nucleus



- a Anthraquinone glycoside
- b Cardiac glycoside
- c Flavonoid
- d Tropane alkaloid

- 15 Tannins are confirmed by which of the following tests?

- a Borntrager's test
- b Modified Borntrager's test
- c Keller Killiani test
- d Goldbeater's skin test

- 16 Jute is an example of fibre belonging to the class of

- a Regenerated fibre
- b Mineral fibre
- c Carbohydrate fibre
- d Protein fibre

- 17 Pollens and spores are examples of

- a Teratogens
- b Hallucinogens
- c Natural allergens
- d Artificial allergens

- 18 Out of the following which one is an example of fibrinolysis activating enzyme

- a Papain
- b Serratiopeptidase
- c Urokinase
- d Bromelain

- 19 The example of mucilage from marine source is

- a Agar
- b Acacia
- c Castor
- d Honey

- 20 The proteolytic enzyme derived from the bacteria present in the gut of silk worm

- a Urokinase
- b Streptokinase
- c Serratiopeptidase
- d Pepsin

- Q.IIA Answer ANY TWO of the following:** **20**
- 1a. Explain the significance of chromatography and moisture content in the identification of DONO. 10
- 1b. Write in detail about factors influencing cultivation of medicinal plants.
- 2a. Enlist various methods of preparation of edible vaccine along with their applications. 10
- 2b. Draw the heterocyclic nucleus/ general structure and write one example with its use and chemical test for the following phytoconstituents:
- i. Tropane alkaloid
- ii. Anthraquinone glycosides
- 3a. Classify fibres based on source. Discuss carbohydrate fibers in detail with applications. 10
- 3b. Explain source, preparation, chemical constituents, chemical tests and uses of Acacia.

- Q.IIB Answer ANY SEVEN out of nine** **35**
1. Give biological source, chemical constituent, and method of preparation and identification tests of any fixed oil having cathartic properties. 5
2. Draw the heterocyclic nucleus/ general structure and write one example with its use and chemical test for the following phytoconstituents 5
- i. Flavonoid
- ii. Volatile oil
3. Define plant tissue culture and its applications. Explain in detail callus culture. 5
4. With the help of suitable examples, explain the role of polyploidy, mutation and hybridization with reference to medicinal plants. 5
5. Write a note on chemo-taxonomical and alphabetical classification of DONO 5
6. Write a note on leaf constants for quantitative microscopy. 5
7. Discuss any two proteolytic enzymes obtained from Plant source. 5
8. Write a note on Adulteration of Drugs with suitable examples. 5
9. Define and Classify Tannins with suitable examples, Give their chemical tests for identification , 5
