

Q.1 – 30 Carry One Mark Each.

1. The structural feature common fro propranolol, atenolol, pindolol, metopropol in the side chain is
(A) Isopropylamino propan-2-ol (B) Dimethylamino propan-2-ol
(C) Diethylamino propan-2-ol (D) Dibutylamino propan-2-ol
2. When N-methyl group of morphine is replaced with an allyl group, the compound formed is
(A) Naloxone-morphine antagonist
(B) Natrexone-morphine agonist
(C) Nalorphine-morphine antagonist
(D) Nalbuphine-morphine agonist/antagonist
3. Nitrazepam can be synthesized from
(A) 2-Bromo-5-amino benzophenone (B) 2-Nitro-2-chloro acetophenone
(C) 2-Amino-5-nitro cyclohexanone (D) 2-Amino-5-nitro benzophenone
4. Clavulanic acid has a beta lactam ring fused to
(A) Thienyl system (B) Thiadiazole system
(C) Thiazolidine system (D) Oxazolidine system
5. A drug which has antipyretic, anti-inflammatroy and antiplatelet activity is
(A) Sulfinpyrazone (B) Aspirin
(C) Ticlopidine (D) Acetaminophen
6. Wild cherry bark contains prunasin which is a
(A) Phenolic glycoside (B) Isothiocyanate glycoside
(C) Coumarin glycoside (D) Cyanogenetic glycoside
7. Ephedra sinica and Ephedra equisetina can be distinguished by type of
(A) Branching (B) Stomata (C) Scaly leaves (D) Alkaloids
8. Microprapagation of the plants is carried out through
(A) Cross fertilization (B) Seed germination
(C) Plant tissue culture (D) Grafting

9. Acontitine belongs to the group of
(A) Steroidal alkaloids (B) Terpenoidal alkaloids
(C) Indole alkaloids (D) Quinoline alkaloids
10. Crude fiber value of a drug is a measure of
(A) Soft tissue matter (B) Woody matter
(C) Mineral matter (D) Organic matter
11. One of the units used for expressing pressure is 'torr' and it is equal to
(A) cm of Hg (B) mm of Hg (C) psi (D) gauss
12. Removal of a single electron from a molecule results in the formation of
(A) Fragment ion (B) Metastable ion
(C) Molecular ion (D) Rearrangement ion
13. Nuclear magnetic moment is NOT shown by
(A) ^{13}C (B) ^{16}O (C) ^1H (D) ^{15}N
14. Derivatisation techniques in HPLC are intended to enhance
(A) Molecular weight (B) Detectability
(C) Reversibility (D) Reproducibility
15. A conductance cell is calibrated by using a solution of known conductivity, i.e., usually a solution of
(A) NaCl (B) Hg_2Cl_2 (C) KCl (D) Na_2SO_4
16. Metoclopramide is generally used for
(A) Prophylaxis of vomiting (B) Preventing motion sickness
(C) Treating irritable bowel syndrome
(D) Treatment of pancreatic insufficiency
17. DNA amplification by the polymerase chain reaction uses
(A) *Thermus aquaticus* DNA polymerase (B) DNA topoisomerase
(C) RNA polymerase (D) DNA helicase
18. Identify the non-pathogenic organism
(A) *Mycobacterium bovis* (B) *Mycobacterium smegmatis*
(C) *Mycobacterium avium* (D) *Mycobacterium intracellulare*

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19. Bioassays are carried out to
(A) Measure the pharmacological activity of a drug
(B) Avoid clinical trails for new drugs
(C) Detect the impurity in a given drug
(D) Screen fro pharmacogenetic influences of new drugs.
20. A direct way of studying idiosyncratic reactions to a given drug is by
(A) changing the route of drug administration
(B) changing the assay method
(C) pharmacogenomics
(D) structure activity relationship studies of a family of compounds
21. An example of haemopoietic growth factor is
(A) platelet derived growth factor (B) epidermal growth factor
(C) iron dextran (D) erythropoietin
22. Safranin is used as a reagent to detect
(A) Gram-negative bacteria (B) Gram-positive bacteria
(C) Acid fast bacteria (D) Myxozoa
23. Sulphonamides do not have adverse drug interaction with
(A) Oral anticoagulants (C) Hydantoin anticonvulsants
(B) Sulfonylurea hypoglycemic agents (D) Dihydrofolate reductase inhibitors
24. Simvastatin belongs to
(A) HMG CoA reductase inhibitor type of antilipidemic agents
(B) HMG CoA reductase inhibitor type of anticoagulant agents
(C) Fibrate type of anticoagulant agents
(D) Fibrate type of antilipidemic agents
25. HIV infection can be clinically controlled with
(A) Cytarabine (B) Acyclovir (C) Zidovudine (D) Amantadine
26. The measure of cohesive strength of the cross linking that occurs between gelatin molecules and is proportional to the molecular weight of gelatin is called
(A) Bloom strength (B) Viscosity
(C) Surface tension (D) Partition coefficient

27. A water soluble substance used as coating material in microencapsulation process is:
(A) Polyethylene (B) Silicone
(C) Hydroxy ethyl cellulose (D) Paraffin
28. One of the following is used as a solubilizing agent to solubilize testosterone in pharmaceutical liquid dosage forms.
(A) Sucrose monoesters (B) Lanolin esters
(C) Lanolin ethers (D) Tweens
29. One of the following is used as a pH dependent controlled release excipient.
(A) Carnauba wax
(B) Hydroxy propyl methyl cellulose phthalate
(C) Methyl cellulose
(D) Glyceryl monostearate
30. The Schedule in D & C act that deals with the standards for disinfectant fluids is:
(A) Schedule B (B) Schedule F (C) Schedule O (D) Schedule M



Q.31 – 80 Carry Two Marks Each.

31. The carboxyl group of aspirin is esterified with N-acetyl-p-aminophenol to get
(A) 3-Acetamidophenyl-O-acetyl salicylate
(B) 4-Acetamidophenyl-O-acetyl salicylate
(C) O-(2-hydroxy benzoyl) salicylic acid
(D) 2-acetamidophenyl-O-acetyl salicylate
32. IUPAC system of nomenclature for diclophenac sodium (BP) is
(A) Sodium 2-[(2, 6-Dichlorophenyl) amino] phenyl acetate
(B) Sodium 3-[(2, 6-Dichlorophenyl) amino] phenyl acetate
(C) Sodium 2-[(2-Chlorophenyl) amino] phenyl acetate
(D) Sodium 2-[(6-Chlorophenyl) amino] phenyl acetate
33. 1-(2-Aminoethyl) perydroazocine on treatment with S-methyl isothiourea gives rise to an adrenergic neuron blocking agent
(A) Bethanidine (B) Mecamylamine (C) Guanadrel (D) Gauenthidine

34. Quercetin is
(A) 5, 7, 3-Trihydroxy flavone (B) 5, 7, 3, 4-Tetrahydroxy flavone
(C) 3, 5, 7, 3, 4-Pentahydroxy flavonol
(D) 3, 5, 7, 3, 4-Pentahydroxy flavonone
35. Meconic acid is a chemical marker for the genus
(A) Piper (B) Pilocarpus (C) Prunus (D) Papaver
36. A novel diterpenoid isolated from the bark of *Taxus brevifolia* is
(A) Demecolcine (B) Paclitaxel (C) Vinblastin (D) Brevifolicin
37. The absorption maximum for polar compounds is usually shifted with change in polarity of the solvents due to
(A) Hydrogen bonding (B) Chemical reaction
(C) Ionization of the compounds (D) Change in the chromophone
38. A titration in which potential applied across two electrodes is maintained at a constant value and the current is measured and plotted against volume of titrant is
(A) Potentiometric titration (B) Amperometric titration
(C) Displacement titration (D) Conductometric titration
39. The parameter in the elution curve that is proportional to the concentration of a compound in gas chromatographic effluent is the
(A) Number of peaks (B) Width of the peak
(C) Area under the peak (D) Shape of the peak
40. A drug solution has a half life of 21 days. Assuming that the drug undergoes first order kinetics, how long will it take for the potency to drop to 90% of the initial potency?
(A) 3.2 days (B) 9.6 days (C) 16 days (D) 6.4 days
41. An amphoteric surfactant used in pharmaceutical disperse system is:
(A) Bile salts (B) Lecithin
(C) Sorbitan monolaurate (D) Sorbitan monostearate
42. An abrasive used in dentifrices is
(A) Dicalcium phosphate (B) Sodium carboxy methyl cellulose

- (C) Sodium lauryl sulfate (D) Dioctyl sodium sulfosuccinate
43. An electrochemical method that enhances the transport of some solute molecules by creating a potential gradient through the skin tissue with an applied electrical current or voltage is called
(A) Electrophoresis (B) Iontophoresis (C) Osmosis (D) Implants
44. A patient with rheumatoid arthritis has been taking acetyl salicylic acid regularly. However, recently she has been experiencing stiffness, swelling and pain due to salicylate resistance. She has occult blood in her faeces. Suggest an appropriate drug suitable for her from those mentioned below:
(A) Paracetamol (B) Celecoxib (C) Piroxicam (D) Naproxen
45. The break down of fibrin is catalyzed by
(A) Plasmin (B) Renin (C) Urokinase (D) Ptylin
46. Which one of the these best describes a process carried out to render a drug pharmacokinetically more acceptable?
(A) Enteric coating if diclofenac.
(B) Co-administration of aspirin with antacids.
(C) Use of colloidal suspensions or liposomes for administering amphotericin-B.
(D) Synthesis of an analogue to obtain high receptor specificity.
47. Azithromycin is clinically administered once daily as compared to erythromycin which is administered every 6 hours because, azithromycin
(A) Penetrates into most tissues and is released very slowly.
(B) Has a methylated nitrogen in its lactone ring which renders it much more potent than erythromycin.
(C) Is a very potent antibiotic but not tolerated well in the gastrointestinal tract.
(D) Is usually presented in a sustained release dosage form.
48. A patient showing muscle rigidity, bradykinesia, tremors and postural instability was administered levo-dopa. Which of the properties of levo-dopa is not true?
(A) Levo-dopa is preferred over dopamine because it can cross the blood brain barrier.
(B) Levo-dopa is the levorotatory stereoisomer of 3, 4-dihydroxy phenylalanine.
(C) Levo-dopa gets decarboxylated in the brain to dopamine.
(D) Levo-dopa is administered because of its strong antagonistic action on dopamine receptors.

49. Autoimmunity refers to
- (A) an automatic trigger of the immune system directed against a specific pathogen.
 - (B) failure to distinguish between self and non-self
 - (C) an automatic segregation of T and B cells.
 - (D) failure of B-cells to interact with T-cells.
50. Which of these is true about the discovery of HB antigen in the blood of people infected with Hepatitis-B?
- (A) It provided a basis for vaccine design.
 - (B) It indicated that specific vaccines cannot be designed for Hepatitis-B.
 - (C) It has not been of much significance.
 - (D) It indicated that Hepatitis-B is a viral disease
51. Which drug molecule DOES NOT have phenylethyl amine moiety?
- (A) Amphetamine (B) Glyburide (C) Pheniramine (D) Mescaline

Q.52-58 are multiple selection items. P, Q, R, S are the options. Two of these options are correct. Choose the correct combination among A, B, C and D.

52. There are two methods by which the duration of action of insulin may be prolonged.
- (P) Binding with resins.
 - (Q) Esterification of amino acid residues.
 - (R) Forming of complex of insulin with protein.
 - (S) Modification of particle size.
- (A) Q, R (B) R, S (C) P, S (D) P, R
53. The attributes of cycloserine are
- (P) No tautomerism shown.
 - (Q) Exists in equilibrium with its tautomeric enolic form.
 - (R) Stable in alkaline solution, destroyed rapidly at neutral or acidic pH.
 - (S) Stable in neutral solution, destroyed in alkaline pH.
- (A) R, S (B) P, Q (C) Q, R (D) P, R

54. Compared to benzyl penicillin, amoxicillin has the following advantages in biological properties.
- (P) The amino group renders the antibiotic resistant to acid catalysed degradation.
(Q) The spectrum of acidity is broadened.
(R) The amino group renders penicillinase resistance to the compound.
(S) The phenolic group renders penicillinase resistance to the compound.
(A) P, Q (B) P, R (C) P, S (D) Q, R
55. The identification of propellants in pharmaceutical aerosols is carried out by
- (P) Gas-chromatography
(Q) Tag-open cup apparatus
(R) Pyknometer
(S) IR Spectrophotometer
(A) P, Q (B) P, S (C) Q, R (D) R, S
56. Schedule 'H' and Schedule 'S' as per the Drugs and Cosmetics Act deal with the following.
- (P) Prescription drugs which are required to be sold by retail only on prescription of R.M.P.
(Q) Standards for cosmetics
(R) Biological and special products
(S) List of coal tar colours permitted to be used in cosmetics and soaps
(A) P, Q (B) P, R (C) Q, S (D) R, S
57. Myristica fragrans Houtt has two of the following characteristics.
- (P) An indeciduous tree, which produces drupaceous, pale yellow fruits.
(Q) Each fruit has several round seeds with smooth surface and lignaceous tegument, and the orange red fleshy aril – the mace, is present inside the seed.
(R) A deciduous tall tree, which produces lignaceous capsules.
(S) Each fruit has a unique avoid seed, with lignified tegument, surrounded by orange red laciniate fleshy aril – the mace.
(A) Q, R (B) P, R (C) P, S (D) Q, S
58. In size exclusion chromatography the stationary phases used are:
- (P) Alumina (Q) Dextran (R) Agarose (S) Styrene
(A) P, S (B) Q, R (C) Q, S (D) P, R

Q.59-65 ARE "MATCHING" exercises. Match Group I with Group II. Choose the correct combination among the alternatives A, B, C and D.

59.

Group I Synthetic Drugs	Group II Intermediates from which Group I drugs are synthesized
(P) Buclizin	(1) Aziridin and thiophosphoryl chloride
(Q) Chlorophenesin	(2) 4-Chlorophenol
(R) Thiotepa	(3) 4-Chlorobenzhydryl chloride
(S) Alprazolam	(4) 2-Amino-5-Chloro benzophenone

Codes:

- (A) P - 3 Q - 2 R - 1 S - 4 (B) P - 4 Q - 2 R - 1 S - 3
(C) P - 2 Q - 4 R - 3 S - 1 (D) P - 1 Q - 2 R - 4 S - 3

60.



Group I Cardiac Agents	Group II Mechanism of action
(P) Digitoxin	(1) Produces negative inotropic effect by blocking calcium channels
(Q) Dobutamine	(2) Depresses adrenergically enhanced calcium influx through beta receptor blockade
(R) Sotalol	(3) Causes elevation of cAMP levels by stimulation of adenylate cyclase.
(S) Nicardipine	(4) Inhibits membrane bound sodium potassium ATPase pump.

Codes:

- (A) P - 4 Q - 3 R - 2 S - 1 (B) P - 3 Q - 4 R - 1 S - 2
(C) P - 4 Q - 2 R - 3 S - 1 (D) P - 4 Q - 3 R - 1 S - 2

61.

Group I Technique employed	Group II Source of Radiation
(P) Visible spectrophotometry	(1) R_f Source transmitter
(Q) IR spectrophotometry	(2) Xenon lamp
(R) NMR spectrophotometry	(3) Tungsten lamp
(S) Fluorescence spectrophotometry	(4) Nernst glower

Codes:

- (A) P - 2 Q - 4 R - 3 S - 1 (B) P - 3 Q - 2 R - 1 S - 4
 (C) P - 3 Q - 4 R - 1 S - 2 (D) P - 4 Q - 1 R - 3 S - 2

62.

Group I Amino acids	Group II Common degradative products that are citric acid cycle intermediates or their precursors.
(P) Aspartic acid	(1) Succinyl CoA
(Q) Arginine	(2) Alpha-Ketoglutarate
(R) Serine	(3) Fumarate
(S) Methionine	(4) Pyruvate

Codes:

- (A) P - 3 Q - 2 R - 4 S - 1 (B) P - 3 Q - 1 R - 4 S - 2
 (C) P - 1 Q - 2 R - 3 S - 4 (D) P - 4 Q - 2 R - 3 S - 1

63.

Group I Tablet defects	Group II Explanation
(P) Picking	(1) A term used to describe the surface material from a tablet that is sticking to and being removed from the tablet's surface by a punch.
(Q) Sticking	(2) Term refers to tablet material adhering to the die wall.
(R) Mottling	(3) Term refers to an unequal distribution of colour on a tablet.
(S) Lamination	(4) Term refers to separation of a tablet into two or more distinct layers.

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