GPAT QUESTION PAPER 2008 WITH ANSWER KEY

PHARMACEUTICAL SCIENCE

Time : 3 hours **Maximum Marks : 150**

(Q. 1 - 20) CARRY ONE MARK EACH

1. An antidiabetic drug Pioglitazone used in Type 2 diabetes acts by
   (a) Decrease of glucose uptake in muscles
   (b) Increasing insulin sensitivity
   (c) Inhibiting intestinal a-glucosidase
   (d) Stimulating insulin secretion
2. An angiotensin-II receptor blocker useful in treating hypertension is
   (a) Enalaprilat (b) Valsartan (c) Atenolol (d) Amlodipine
3. Co-administration of NSAIDs with Warfarin may often lead to
   (a) Antagonistic interaction
   (b) Interaction due to change in drug transport
   (c) Interaction due to disturbances in electrolyte balance
   (d) Additive or synergistic interaction
4. Laminaria and Kelp are the principal genera, currently used for the industrial production of
   (a) Carrageenans
   (b) Agar
   (c) Fucans
   (d) Alginic acid and alginates
5. A transverse section of *Glycyrrhiza glabra* when treated with 80% sulphuric acid gave
   (a) Deep yellow color
   (b) No reaction, but only charring
   (c) Deep blue color
   (d) Deep red color
6. Microscopy of the bulbs of Urginea indica family Liliaceae shows
   (a) Prisms of calcium oxalate
   (b) Calcium carbonate and silica
   (c) Rosettes if calcium oxalate
   (d) Raphides of calcium oxalate
7. Streptomycin is a
   (a) Di-acidic base possessing an aldehydic carbonyl group
   (b) Tri-acidic base possessing an aldehydic carbonyl group
   (c) Neutral compound possessing a ketonic group
   (d) Acid compound possessing a carboxyl group
8. The antihistaminic with diphenyl methyl group is
   (a) Methdilazine
   (b) Cyclizine hydrochloride
   (c) Pheniramine
   (d) Phenindamine
9. Heterocyclic rings present in pilocarpine are
   (a) Imidazole and Quinoline
   (b) Imidazole and Thiazole
   (c) Quinoline and phenanthrene
   (d) Imidazole and Dihydrofuran

10. The most important microbial virulence factor in etiology of meningitis is

(a) Exotoxin (b) Components of the capsule

(c) Coagulase (d) Hyaluronidase

11. Commonly used tetanus vaccine is produced by

(a) Treatment of the causative organism with heat or UV light and finally obtaining the toxoid

(b) Subculturing the virus at pH 10.4

(c) Artificially generating antibodies to viral glycoproteins

(d) Isolating the antigenicity genes from the causative organism

12. Which of the following equations is valid for standard B-DNA

(a) A +T =G + C (b) A + T = 2(G + C)

(c) 2(A + T) = 3(G + C) (d) A + G = T + C

13. Clinical jaundice, typified by yellowing of the tissues is associated with elevated levels of

(a) Serum lysozyme (b) Serum bilirubin

(c) Serum creatinine (d) Serum g-glutamyl transferase

14. In NMR spectrometry, the chemical shift (δ) is expressed in

(a) Parts per million (b) Gauss (c) Tesla (d) Hertz

15. In chromatographic separation, the different species in the sample, undergo the process of

(a) Chemical interaction (b) Partition

(c) Volatilization (d) Ionization

16. A target material used in the production of X-rays is

(a) Potassium (b) Copper

(c) Aluminium (d) Sodium

17. The requirement and guidelines for clinical trials, import and manufacture of new drugs as per the Drugs & Cosmetics Rules is given under Schedule

(a) N (b) Y (c) A (d) B

18. The growth of large particles at the expense of smaller ones, as a result of a difference in the solubility of the particles of varying sizes, is termed as

(a) Interfacial phenomenon (b) Partitioning

(c) Erosive formulation (d) Ostwald ripening

19. Cyclic oligomers of glucose that form water soluble inclusion complexes, which are biocompatible andimprove the bioavailability of drugs

(a) Chlorophyll (b) Polyethylene glycol

(c) Cross povidone (d) Cyclodextrin

20. 'Draves test' is associated with measuring the efficiency of

(a) Detergent (b) Witting agents

(c) Suspending agents (d) Adsorbent

Q.21 to Q.75 CARRY TWO MARKS EACH.

21. Effect of fibrates on blood lipids are mediated by

(a) Inhibiting both synthesis and esterification of fatty acids

(b) Their interaction with peroxime proliferator-activated receptors (PPARs)

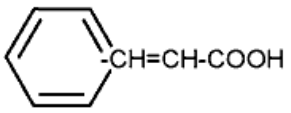
(c) Reducing the conversion of HMG-CoA to mevalonate

(d) Sequstering bile acids

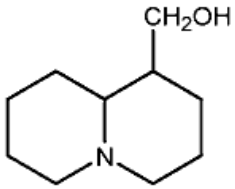
22. A cardioselective beta blocker with vasodilating properties is

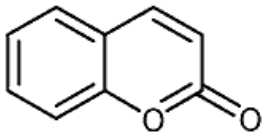
(a) Pindolo (b) Atenolol (c) Bisoprolol (d) Nebivolol

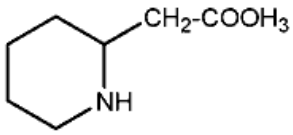
23. Choose the correct option

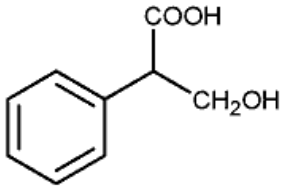


is the precursor for the biosynthesis of

(a) 

(b) 

(c) 

(d) 

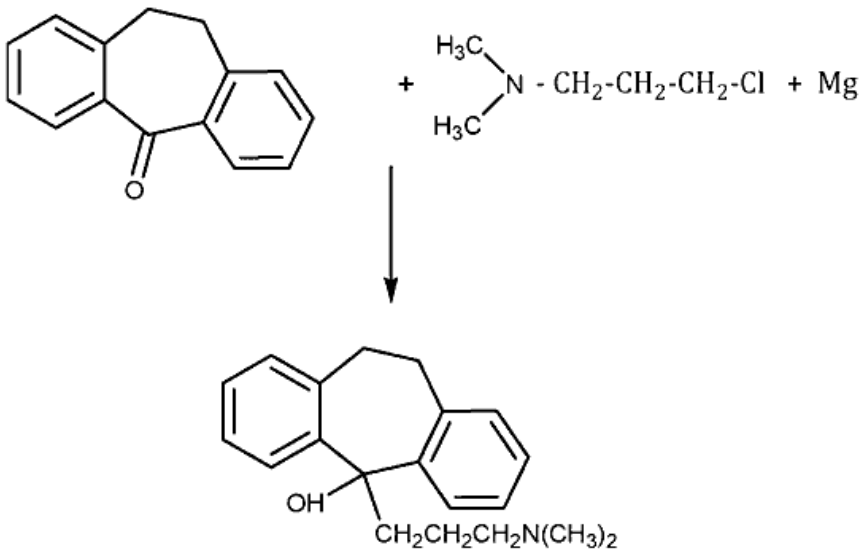
24. (-)-Hyscyamine is

(a) 15-20 times more active as a mydriatic than (+)-hyoscyamine

(b) Inactive as a mydriatic

(c) 3-5 times less active as a mydriatic than (+)-hyoscyamine

(d) 100 times more active as a mydriatic (+)-hyoscyamine

25. 

The reaction is known as

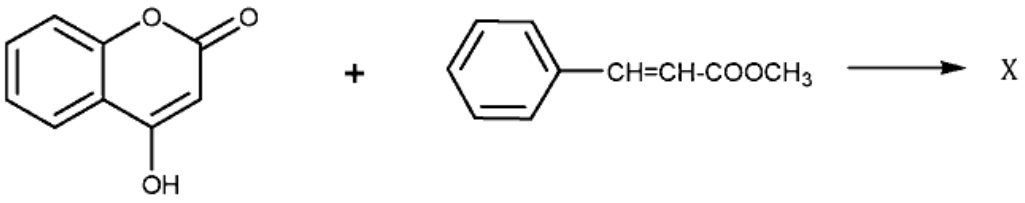
(a) Grignard reaction
(b) Gabriel phthalimide synthesis
(c) Gomberg reaction
(d) Reimer Tiemann reaction

26. In thiazole diuretics, the position 7 is very important and is occupied by a

(a) CH_3 group
(b) Free sulphamoyl group
(c) Chloro group
(d) Free – NH_2 group

27. Compound I reacts with II to form X is

X is



I II

(a) Ethyle biscoumacetate
(b) Phenindione
(c) Warfarin
(d) Dicoumarol

28. A mass spectrum is obtained by plotting

(a) Molecular weight versus peak height
(b) Concentration versus peak height
(c) Concentration versus degree of deflection of ions
(d) Abundance of ions versus their m/e ratio

29. Aldehydes can be distinguished from other C=O containing compounds by IR, due to

(a) The low frequency of absorpition of aldehydes
(b) The alkyl or group is attached to >C=O
(c) The double bond present
(d) The doublet at the C-H-strecthing region

30. A super disintegrant in tablet formulation is

(a) Sodium starch glycollate
(b) Starch
(c) PVP
(d) Mg-Aluminium silicate

31. A drug was administered to 30 subjects as a tablet (30 mg), an oral aqueous solution (30 mg) and as an intravenous (0.3 mg). Mean AUC's (ng.hr/mL), dose normalized to1 mg, for tablet, oral solution and IV were 0.91, 0.87 and 103.0 respectively. http://www.xamstudy.com

(a) 104.6%, 0.883%
(b) 81%, 5.6%
(c) 10.46%, 8.83%
(d) 19%, 56%

Calculate the relative bioavailability of the drug in table compared to the solution to the oral solution absolute bioavailability of tables from.

32. When ammonium chloride is gradually and slowly incorporates in to an emulsion stabilized withammonium oleate,

(a) Emulsion will crack immediately
(b) It will invert from o/w to w/o type
(c) It will invert from w/o to o/w type
(d) There will be no impact on its physical stability

33. A prescription requires 4 mEq/litervofhydrogen phosphateion HPO_4^{-2}.How many milligrams of diabasic potassium phosphate, K_2HPO_4 (molecular weight 174) will be required ?

(a) 174 mg/liter (b) 130.5 mg/liter

(c) 522 mg/liter (d) 348 mg/liter

34. Gram positive bacterial typically contain

(a) Cell wall that lack peptidoglycans

(b) Repeating units arabinogalactan and mycolates in their cellwalls

(c) Peptidoglycan muramic acid and D-amino acids in their cell walls

(d) Cell walls containing predominantly polysaccharides and glycoproteins

35. Quartenary structure of a protine molecule refers to

(a) Specific association to two or more copies of a polypeptide chain to result in a biologically activemolecule

(b) Regular seen local structure within a polypeptide chain

(c) The portion of the polypeptide chain that comes into contact with another protein molecule

(d) The portion of the structure that gets stabilized upon binding to nucleic acid

36. A blood sample is treated with alkaline phosphotungstic acid to from tungsten blue, which is estimated colorimetrically to give a positive reaction. The sample contains

(a) Protein (b) Serum creatinine

(c) Serum phenylalanine (d) Uric acid

37. Two important steps for plant regeneration by organogenesis are

(P) Establishment of callus cultures (Q) Initiation of somatic embryogenesis

(R) Germination of seeds (S) Initiation of cell suspensions

(a) Q, S (b) P, R (c) P, S (d) Q, R

38. Two tests for ephedrine are

(P) A solution in dilute HCI, treated with copper sulphate and sodium hydroxide gives a violet colour

(Q) An alcoholic solution gives a red colour with$FeCI_3$

(R) On shaking with solvent ether, the organic layer shows purple while the aqueous layer becomes blue

(S) A solution of vanillin gives a violet-red colour

(a) Q, S (b) P, S (c) P, R (d) Q, R

39. Dried fruits of sweet fennel has two the following properties

(P) 80 % of E-anethole, 10 % of methyl chavicol and 5% (+)-fenchone as constituents

(Q) 65-75 % (+) Linalool as a constituent

(R) The fruit is a diankene, almost cylinder and surrounded bylarge stylopod

(S) The fruit is elongated and surrounded by cayculus

(a) P, R (b) Q, S (c) P, S (d) Q, R

40. Dihydroxy acetone phosphate is involved in the biosyntheses of two of the following

(P) Serotonin (Q) Triacylglycerol

(R) Pyruvate (S) Methionine

(a) P, Q (b) P, R (c) Q, S (d) Q, R

41. The virus responsible for SARS can be described by two of the following features

(P) It contains double-standards DNA and requires two complementary strands to be synthesized to serve as mRNA

(Q) It has distinctive club shaped particles projecting from the surface, appearing like a crown

(R) It contains plus-strand RNA that can serve directly as mRNA

(S) It is a retrovirus and requires extracellular DNA for replication

(a) P, Q (b) P, S (c) Q, R (d) R, S

42. Two of the following facts are associated with Ethylene oxide gas

(P) It is non toxic and non inflammable and used for sterilization

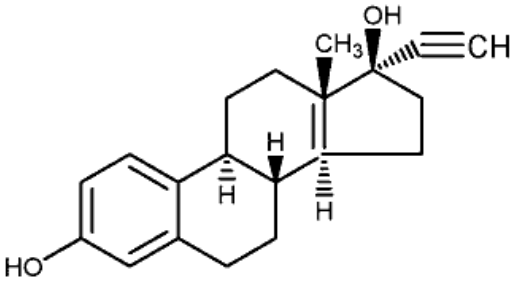
(Q) It is a colourless inflammable gas. Toxic in nature and used for sterilization

(R) It is diluted with CO_2

(S) It cannot penetrated plastic and paper packaging

(a) P, R (b) P, S (c) R, S (d) Q, R

43.



(P) Is active parenterally

(Q) Shows greater activity orally than parenterally

(R) Is orally inactive

(S) Has no parenteral activity

(a) P, S (b) Q, R (c) R, S (d) P, S

44. Tranexamic acid is

(P) Trans-4-amino methyl cyclohexane carbolic acid

(Q) A polypeptide

(R) An inhibitor of proteolytic enzymes including plasmin

(S) Used for the prophylaxis of hemorrhage associated with excessive fibrinolysis

(a) P, S (b) P, R (c) Q, R (d) R, S

45. Prostaglandines are derivatives of

(P) C_{25} acid (Q) 7-(2 cyclohexyl) pentenoic acid

(R) C_{20} prostanoicacid (S) 7-(2 octyl cyclopentyl) heptanoic acid

(a) P, Q (b) R, S (c) P, R (d) Q, S

46. Two ex-officio members of the Drugs Technical Advisory Board under Drugs and Cosmetic Act are

(P) The Drugs Controller Genral of India

(Q) The President, Medical Council of India

(R) The Secretary, Pharmacy Council of India

(S) The Director, National Institute of Pharmaceutical Education and Research, India

(a) P, Q (b) P, R (c) R, S (d) P, S

47. Calfactant is

(P) A sterile non-pyrogenic lung surfactant intended for intractracheal instillation to premature infants

(Q) A synthetic surfactant popularly usedto prepare totaleparenteral nutritionto premature infants

(R) A potentchelating agent used to prevent metal induced oxidation process

(S) An extract of natural surfactant from calf lungs

(a) P, Q (b) R, S (c) P, S (d) Q, R

48. In cross-over bioavailability studies, in which the subjects must be rested for sufficient time betweeneach drug administration to ensure that 'washout' is complete. Practically, wash-out is deemed complete, when

(P) 95% is wash out (Q) 100% is wash out

(R) 5 biologica half-lives have elapsed (S) 2 biological half-lives have elapsed

(a) P, R (b) P, S (c) Q, R (d) Q, S

49. Two reference electrodes are

(P) Glass membrane electrodes (Q) Sb/Sb_2O_3 electrodes

(R) Calomel electrodes (S) Silver/silver-chloride electrodes

(a) P, Q (b) Q, S (c) R, S (d) P, R

50. Polarography can be used for the

(P) Simultaneous determination of several analytes

(Q) Study of resistance of solution

(R) Study of current potential relationship

(S) Study of optical activity of organic compounds

(a) P, S (b) Q, S (c) P, R (d) P, Q

51. Primary amines show

(P) Two N-H stretching bands in the range of 3500-3300 cm^{-1}

(Q) Only one band in the region3500-3300 cm^{-1}

(R) -NH band in primary amine results in a broad band in the region 1640-1560 cm^{-1}

(S) The typical –NH2 stretching value at 1715 cm^{-1}

(a) Q, R (b) P, R (c) P, S (d) Q, S

52. The drug Disulfiram is

(P) Known to inhibit dopamine β -hydroxylase and cause noradrenaline depletion

(Q) A substance that produce aversive reaction to alcohol

(R) Known to stimulate dopamine β-hydroxylase

(S) Used in barbiturate poisoning

(a) P, S (b) Q, R (c) R, S (d) P, Q

53. Two important attributes associated with L-asparaginase

(P) An enzyme obtained from *E coil* and is administered parenterally

(Q) An enzyme obtained from *Streptococcus caespitosus* and is administered orally

(R) Used in acute lymphocytic leukemia

(S) Used as a fibrinolytic agent

(a) P, S (b) P, R (c) Q, R (d) Q, S

54. Amikacin is

(P) A semisynthetic aminoglycoside and a derivative of kanamycin

(Q) A semisynthetic aminoglycoside and a derivative of tobramycin

(R) It is administered parenterally and does not cause nephrotoxicity and ototoxicity

(S) It is administered parenterally and is both nephrotoxicity and ototoxicity

(a) P, Q (b) P, R (c) P, S (d) Q, S

Q.55-70 Are Matching Exercise Match Group I with Group II and identify the correct combinations

55.

Group I Plant	**Group II** Source
(P) Thorn apple	(1) Dried leaves and flowering tops of *Hyoscyamus niger*
(Q) Henebane	(2) Dried leaves and flowering tops of *Datura atramonium*
(R) Deadly nightshade	(3) Leaves of Diditalis purpurea dried at a Temperature below 60^{0}C
(S) Foxglove leaves	(4) Dried leaves and other aerial parts of *Atropa bellodona* or *Atropa acuminate*

(a) P-2, Q-1, R-4, S-3 (b) P-1, Q-2, R-3, S-4

(c) P-3, Q-4, R-2, S-1 (d) P-2, Q-3, R-4, S-1

56.

Group I Drugs	Group II Source
(P) Kaolin	(1) Natural diatomaceous earth consisting of siliceous skeletons of fossils
(Q) Keiselguhr	(2) Purified native hydrated aluminium Silicate
(R) Calamine	(3) Hydrated magnesium silicate
(S) Talc	(4) An ore contain zinc oxide with a small Amount of ferric oxide

(a) P-1, Q-4, R-3, S-2 (b) P-2, Q-4, R-1, S-3

(c) P-2, Q-1, R-4, S-3 (d) P-3, Q-2, R-1, S-4

57. Proof for the following in the natural products is obtained by some reactions.

Group I Natural Products	Group II Reactions
(P) Cholesterol-nature of ring	(1) Treatment with HNO_2 forms a nitroso compound
(Q) Ephedrine-secondary amino group	(2) Selenium dehydrogenation gives Diel's hydrocarbon
(R) Morphine-secondary –OH group	(3) With CH_3I in aqueous KHO gives (-) codeine, which is not soluble in alkali; codeine can be oxidized with chromic acid to codeinone
(S) Caffeine-nature of ring	(4) Oxidation which potassium chlorate in hydrochloride acid gives diamethyl alloxan and methyl urea

(a) P-3, Q-1, R-2, S-4 (b) P-2, Q-1, R-3, S-4

(c) P-3, Q-4, R-1, S-4 (d) P-4, Q-2, R-1, S-3

58. Derivatives of cortisol and their structural modification are

Group I Derivative	**Group II** Structural modifaction
(P) Prednisolone	(1) 1, 2-dehydro, 9α-fluoro, 16α-methyl
(Q) Dexamethasone	(2) 1, 2-dehydro
(R) Betamethasone	(3) 1, 2-dehydro, 9α-fluoro, 16β-methyl
(S) Triamcinolone	(4) 1, 2-dehydro, 9α-fluoro, 16α-hydroxy

(a) P-2, Q-1, R-3, S-4 (b) P-1, Q-3, R-4, S-2

(c) P-2, Q-4, R-3, S-1 (d) P-3, Q-2, R-1, S-4

59.

Group I Drugs	**Group II** Starting material for synthesis
(P) Clofazimine	(1) p-chloronitro benzene
(Q) Ketoconazole	(2) L-phenyl alanine
(R) Melphalan	(3) –N-(4-chlorophenyl)-O-phenylenediamine
(S) Dapsone	(4) 2,4-dichloro phenylbromide and glycerine

(a) P-1, Q-2, R-3, S-4 (b) P-4, Q-3, R-1, S-2

(c) P-3, Q-4, R-2, S-1 (d) P-2, Q-1, R-4, S-3

60.

Group I Industrial dryers	**Group II** Pharmaceutical material dried
(P) Drum dryer	(1) Antibiotic solution
(Q) Fluidized bed dryer	(2) Tablet granules
(R) Spray dryer	(3) Gelatin
(S) Freeze dryer	(4) Suspension of kaolin

(a) P-1, Q-3, R-4, S-2 (b) P-4, Q-2, R-3, S-1

(c) P-4, Q-2, R-1, S-3 (d) P-3, Q-2, R-4, S-1

61. **Group I** — Name of equation

(P) Noyes & Whitney equation

(Q) B.E.T equation

(R) Stokes equation

(S) Higuchi equation

Group II — Equation

(1) $\frac{dM}{dt}=\frac{DS}{h}(C_s-C)$

(2) $\frac{P}{Y(P_0-P)}=\frac{1}{Y_m b}+\frac{b-1}{y_m b}\frac{P}{P_0}$

(3) $v=\frac{d^2(P_s-P_0)g}{18\eta_0}$

(4) $Q=\sqrt{\frac{DC_s t}{2A-C_s}\cdot(2A-C_s)}$

(a) P-4, Q-2, R-3, S-1
(b) P-2, Q-4, R-1, S-3
(c) P-3, Q-1, R-2, S-4
(d) P-1, Q-2, R-3, S-4

62. **Group I** — Types of coating

(P) Seal coating
(Q) Sub coating
(R) Polishing
(S) Film coating

Group II — Coating maerial

(1) HPMC
(2) Carnauba wax
(3) Gelatin
(4) PEG4000

(a) P-4, Q-3, R-2, S-1
(b) P-3, Q-1, R-2, S-4
(c) P-3, Q-1, R-2, S-4
(d) P-1, Q-2, R-3, S-4

63. **Group I** — Interacting drugs

(P) Verapamil and Atenolol
(Q) Clozapine and Co-trimoxazole
(R) Alcohol and Flunitrazepam
(S) Ramipril and amiloride

Group II — Pharmacological effect

(1) Increased risk of hyperkalemia
(2) Bradycardia and asystole
(3) Increased risk of bone marrow suppresssion
(4) Severe CNS depression

(a) P-4, Q-2, R-3, S-1
(b) P-2, Q-3, R-4, S-1
(c) P-3, Q-4, R-2, S-1
(d) P-4, Q-1, R-2, S-3

64. **Group I** — Receptors

(P) β-adrenergic (Type 2)
(Q) α-adrenergic (Type 1)
(R) Dopaminergic (Type 2)
(S) 5-hydroxytryptamine (Type 1A)

Group II — Agonists

(1) Phenylephrine
(2) Bromocriptine
(3) Ritodrine
(4) Buspirone

(a) P-1, Q-4, R-3, S-2
(b) P-3, Q-2, R-4, S-1
(c) P-2, Q-3, R-4, S-1
(d) P-3, Q-1, R-2, S-4

65. **Group I** — Drugs

(P) Terbinafine

(Q) Cidofovir

(R) Imatinib

(S) Stavudine

Group II — Mechanisms

(1) Inhibition of reverse transcriptase

(2) Selective inhibition of squalene epoxidase

(3) Inhibition of DNA polymerase

(4) Tyrosine kinase inhibitor

(a) P-1, Q-2, R-3, S-4

(b) P-4, Q-3, R-2, S-1

(c) P-2, Q-3, R-4, S-1

(d) P-3, Q-2, R-1, S-4

66. **Group I** — Materials used

(P) Sodium chloride

(Q) Glass

(R) Quartz

(S) Potassium hydrogen phthalate

Group II — Instrumental techniques

(1) Colorimetry

(2) UV spectrophotometry

(3) X-ray diffraction

(4) IR spectrophotometry

(a) P-1, Q-2, R-3, S-4

(b) P-4, Q-1, R-2, S-3

(c) P-3, Q-4, R-1, S-2

(d) P-2, Q-3, R-4, S-1

67. **Group I** — Drugs

(P) Iopanoic acid

(Q) Cyclizine hydrochloride

(R) Chlorothiazide

(S) Chlorambucil

Group II — B.P Assay

(1) Titration of a solution in anhydrous formic acid and acetic anhydride with 0.1N perchloric acid

(2) Titration of a solution in dimethylformamide with 0.1M tetrabutyl ammonium hydroxide

(3) Treating with sodium hydroxide and zinc powder and then titration with 0.1N silver nitrate

(4) Titration with 0.1N sodium hydroxide using phenolphthalein indicator

(a) P-1, Q-2, R-3, S-4

(b) P-2, Q-4, R-1, S-3

(c) P-4, Q-3, R-1, S-2

(d) P-3, Q-1, R-2, S-4

68. **Group I** — Techniques

(P) Potentiometry

(Q) Polarography

(R) Colorimetry

(S) Column chromatography

Group II — Related equations

(1) $id=708\ n\ CD^{1/2}\ m^{2/3}\ t^{1/6}$

(2) VR=tR Fc

(3) $E = E^0 - \frac{RT}{nF}\log[H^+]$

(4) A=ebc

(a) P-1, Q-4, R-3, S-2

(b) P-3, Q-2, R-1, S-4

(c) P-2, Q-3, R-4, S-1

(d) P-2, Q-3, R-4, S-1

69. **Group I** — Test

(P) Direct agglutination test

(Q) Passive agglutination

(R) Haemagglutination inhibition test

(S) Coomb's test

Group II — Principle

(1) Measures antibody titres after soluble antigens are attached to inert particles and incubated with antibodies.

(2) Detects blocking-type antibodies, globulins and complement that are attached to red cell antigens.

(3) RBCs coated with homologous antigens added to antibodies incubated with soluble antigens

(4) RBC antigen incubated with antibodies and antibody titre visually examined

(a) P-2, Q-4, R-1, S-3

(b) P-4, Q-1, R-3, S-2

(c) P-1, Q-3, R-2, S-4

(d) P-3, Q-2, R-4, S-1

70. **Group I** — Enzymes

(P) Na^+-K^+ ATPase

(Q) Cytochrome c oxidase

(R) Malate dehydrogenase

(S) Tyrosine kinase

Group II — Function

(1) Electron transport

(2) Pathway converting pyruvate to oxaloacetate

(3) Generation of electrochemical potential gradient across membranes

(4) Signal transduction

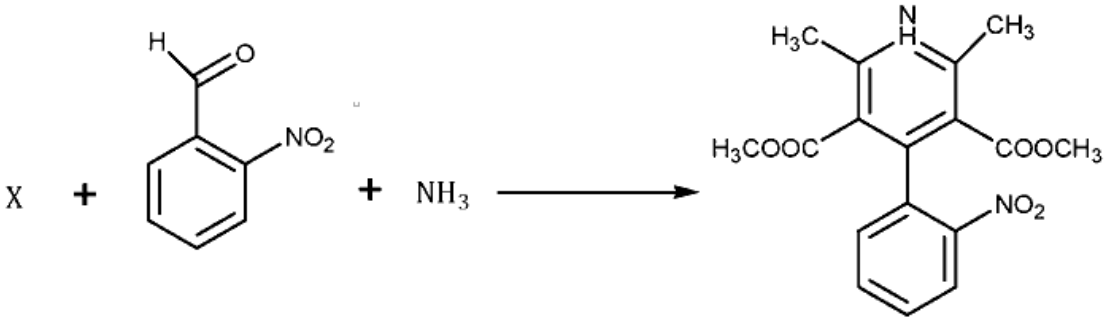
(a) P-3, Q-1, R-2, S-4

(b) P-1, Q-3, R-4, S-2

(c) P-2, Q-4, R-1, S-3

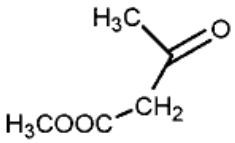
(d) P-4, Q-2, R-3, S-1

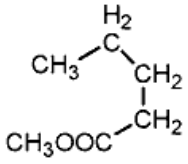
Common Data Question 71,72,73

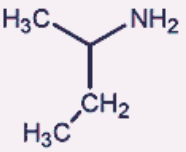


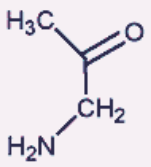
Nifedipine

71. Reagent X is

(a) 

(b) 

(c) 

(d) 

72. Nifedipine when exposed to day light is readily converted into derivative of

(a) 4-phenyl pyridine
(b) Nitrosophenyl pyridine
(c) Diazophenyl pyridine
(d) Nitrobenzene

73. The B.P. assay of Nifedipine is by a titration of a

(a) Solution in anhydrous acetic acid with 0.1 perchloric acid
(b) Solution in previously neutralized acetone with 0.1N sodium hydroxide; end point by potentiometry
(c) Solution is previously neutralized acetone against standard potassium dichromate solution
(d) A solution in 2-methyl 2-propanol and perchloric acid with 0.1 M cerium sulphate using ferroin as indicator http://www.xamstudy.com

COMMON DATA FOR QUESTION 74 AND 75

Tenoposide is a natural product used for the management of certain diseases

74. It is derived from

(a) Flavonolignans from *Silybum marianum*
(b) Lignans from *Podophyllum peltatum*
(c) Lignans from *Schizandra chinesis*
(d) Neolignans from *Piper futokadsura*

75. This drug is used in the management of

(a) Candidiasis
(b) Trypanosomiasis
(c) Cardiac arrythmia
(d) Acute leukemia in children

Linked Answer Question: Q.76 to Q.85 carry two marks each.

Statement for Linked Answers Question 76.& 77.

Extract of chondrodendron tomentosum, family manispermaceae contains several alkaloids

76. One of the important alkaloid is

(a) (-) Phyllandrene
(b) (+) Hollarhenine
(c) (+) Tubocurarine
(d) (±) Colchicine

77. This alkaloid has

(a) Bis benzyl tetrahydo isoquinoline ring
(b) Quinoline ring
(c) Phenenthrene ring
(d) Pyrido pyrimidine ring

Statement for Linked Answers Question78.&79.

Several drugs are used for migraine

78. Acute migraine is treated with

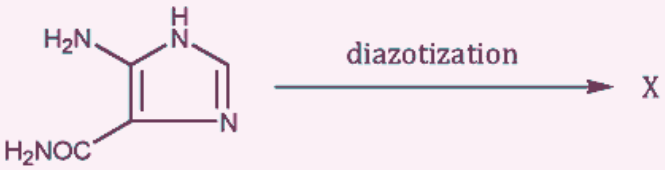
(a) Prazosin
(b) Formeterol
(c) Sumatriptan
(d) Dopamine

79. The drug chosen is the agonist of

(a) α_1 adrenociptoe (b) α_2 adrenoceptor (c) M_2 receptor (d) 5-HT_{1D} receptor

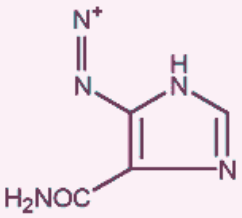
Statement for Linked Answer Question 80 & 81

A drug which is used for malignant melanoma is obtained as follows:

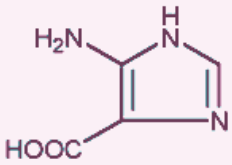


80. X is

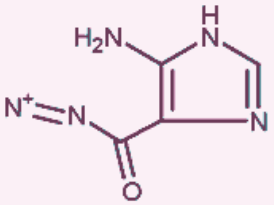
(a)



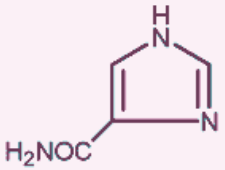
(b)



(c)

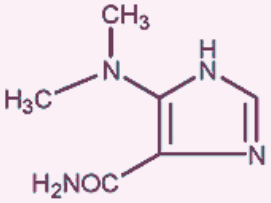


(d)

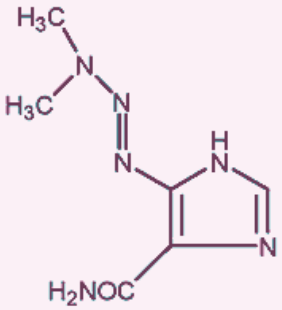


81. X on treatment with dimethylamine gives the drug

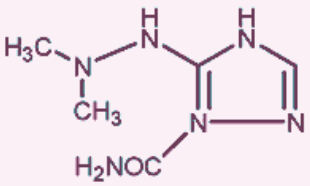
(a)



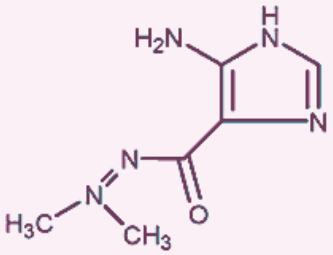
(b)



(c)



(d)



Statement for Linked Answer Question 82.& 83.

A 250 mg dose of a drug was administered to a patient by rapid IV injections. The initial plasma concentration was 2.50ìg/mL. After 4 hours the plasma concentration was 1.89μg/mL. Assuming that the drug was eliminated by a pseudo first order process and the body behaves as one compartment model.

82. K_{el} is

(a) $0.0699h^{-1}$ (b) $0.0349h^{-1}$ (c) $1.623h^{-1}$ (d) $0.699h^{-1}$

83. Biological half life is

(a) 4.95 hours (b) 19.82 hours (c) 99.1 hours (d) 9.91 hours

Statement for Linked Answers Question84.&85.

As per the woodward-Fieser rule, the absorption maxima of the compound shown is calculated from the base value and the ring residue values

84. Base value is

(a) 215nm (b) 233nm (c) 240nm (d) 217nm

85. Absorption maxima is

(a) 273nm (b) 258nm (c) 265nm (d) 237nm

End of paper

ANSWER KEY GATE 2008

1-b	2-b	3-d	4-d	5-a	6-d
7-b	8-b	9-d	10-b	11-a	12-d
13-b	14-a	15-b	16-b	17-b	18-d
19-d	20-b	21-b	22-d	23-b	24-d
25-a	26-b	27-c	28-d	29-d	30-a
31-a	32-a	33-d	34-c	35-a	36-b
37-c	38-c	39-a	40-d	41-c	42-d
43-a	44-a	45-b	46-a	47-c	48-a
49-d	50-c	51-b	52-d	53-b	54-c
55-a	56-c	57-b	58-b	59-c	60-c
61-d	62-a	63-b	64-d	65-c	66-b
67-b	68-d	69-b	70-a	71-a	72-b
73-d	74-b	75-d	76-c	77-a	78-c
79-d	80-a	81-b	82-a	83-d	84-b
85-a					