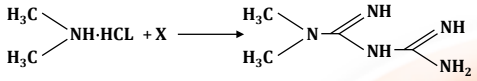
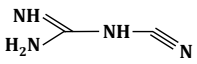
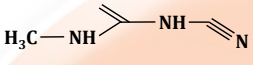
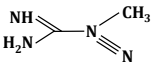
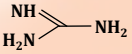
GATE-2006

1. 5.6-methylene dioxyindole is treated with oxalyl chloride to give a keto acid chloride. The method is useful for introducing a two-carbon side chain at
(a) Dioxy group of indoles
(b) NH-group of indole
(c) 7-position of indole
(d) Electron rich 3-position of indole

2. Identify X in the following reaction



(a) 
(b) 
(c) 
(d) 

3. An antineoplastic agent Methotrexate inhibits the enzyme dihydro folate reductase. They bind so tightly that their inhibition has been termed "Pseudo irreversible"-basis of the binding is due to
(a) Free carboxyl group
(b) N-methyl p-amino benzyl group
(c) Diamino pyrimidine
(d) Glutamic acid

4. β-lactamase inhibitor Clavulanic acid is
(a) 1,1-dioxo penicillanic acid
(b) Δ^2 carbapenem
(c) Cepham
(d) 1-oxopenam structure and has no 6-acyl amino side chain of Penicillin

5. In a mixture which of the following gases can be used in flame photometry to get a temperature of 2045°C
(a) Hydrogen and nitrous oxide
(b) Acetylene and oxygen
(c) Hydrogen and air
(d) Hydrogen and oxygen

6. Tesla is a unit to express
(a) Frequency (b) Pressure
(c) Voltage (d) Magnetic field strength

7. A monochromator is not used in
(a) UV spectrophotometer (b) FT-IR spectrophotometer
(c) Spectrofluorometer (d) IR-spectrometer

8. The properties of solutions containing surface active agents change sharply over a narrow concentration range is called as
(a) Critical micelle concentration
(b) lonic concentration
(c) Hydrogen ion concentration
(d) Surface tension

9. Certain suspensions with a high percentage of dispersed solids exhibit a increase in resistance to flow with increasing rates of shear Such systems actually increase in volume when sheared and are termed as
(a) Thixotropic (b) Dilatant
(c) Plastic (d) Newtonian

10. In the process of sugar coating of tablets the colorants are added in one of the following steps
(a) Syrup coating (b) Polishing
(c) Sub-coating (d) Seal coating

11. Metered dose inhalers documentation records shall show one of the information in addition to the general GMP
(a) Portable stirrer
(b) Records of rejection during on line check weighing
(c) Water distillation unit deionizer
(d) Electrically operated mixer

12. A drug which inhibits mycobacterial RNA polymerase and is very useful in treating Mycobacterium avium complex is
(a) Isoniazid (b) Ethionamide
(c) Capreomycin (d) Rifabutin

13. A 80 years old lady suffering from osteoarthritis of hip and knee joints is given Diclofenac 50 mg thrice daily and Paracetamol 1 gm as required. She complains of passing black stools. This symptom is due to
(a) Paracetamol causing the black stool
(b) Change in food habits
(c) Upper gastrointestinal bleeding due to Diclofenac
(d) Age related decrease in gastrointestinal motility

14. Terazosin, an antihypertensive drug act by
(a) Blocking β adrenoreceptors
(b) Blocking α_1 adrenoreceptors
(c) Diuretic action
(d) Inhibition of ACE

15. An imidazole aromatase inhibitor which is effective in reducing estrogen level is
(a) Anastrozole (b) Exemestane
(c) Mitotane (d) Dexamethasone

16. The main constituent in the dried ripe seeds of Colchicum luteum and Colchicum autumnale Linn. is derived from
(a) Tyrosine, phenylalanine and dihydroxy phenylalanine
(b) Tryptophan and Tryptamine
(c) Ornithine
(d) Lysine

17. Formation of somatic embryos or embryogenic tissue directly from the explant without the formation of an intermediate callus phase Is
(a) Somatic embryogenic response
(b) Callus formation

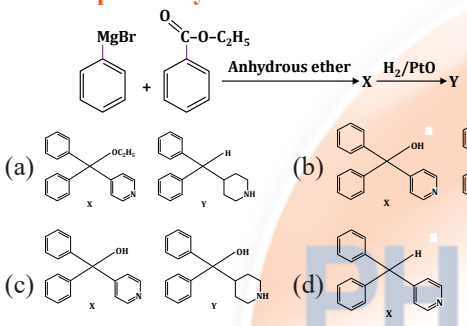
(c) Direct somatic embryogenesis
(d) Premature germination

18. While performing chemo microscopy of a drug lignified trichomes were observed Probable drug is
(a) Buchu (b) Lobelia
(c) Nux vomica (d) Mint leaves

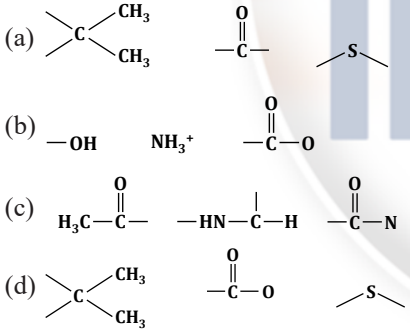
19. A common organism that causes meningitis belongs to the genus
(a) Candida (b) Neisseria
(c) Pseudomonas (d) Clostridium

20. Bradykinin is
(a) A steroidal hormone (b) A serotonin derivative
(c) A nonapeptide (d) A lipoprotein

21. Identify the correct combination of the Intermediate X and the product y



22. Amoxycillin, a polyfunctional drug has different pKa values such as 9.6, 7.4 and 2.4, at physiological pH. Groups responsible respectively are



23. A drug which has potent peripheral vasodilatory properties inhibits the voltage dependent calcium channel in vascular smooth much is
(a) Diethyl 1,4-dihydro-2,6-dimethyl-4-(2-nitrophenyl) 3,5 Pyridine carboxylate
(b) Dimethyl 1,4-dihydro-2,6-diethyl-4-(2-nitrophenyl) 1.5 Pyridine carboxylate
(c) Dimethyl 1,4-dihydro 2,6-dimethyl 4 12-nitrophenyl)-3,5- Pyrazine carboxylate
(d) Dimethyl 1,4-dihydro-26 dimethyl-4-12-nitrophenyl) 3,5-Pyridine

24. In the Bragg's equation $n\lambda = 2d \sin\theta$, 2θ is the angle between
(a) The direction between the incident beam and the refracted beam
(b) The surface of the crystal and the incident fluorescent beam
(c) The direction of the incident and that of the diffracted beam
(d) Two incident beams

25. The colour which human eye perceives is not the colour corresponding to the wavelength of the light
(a) Reflected (b) Absorbed (c) Refracted (d) Diffracted

26. During compression of moisture critical granules a hygroscopic substance used to maintain a proper moisture level is
(a) Sorbitol (b) Talc (c) Acacia (d) Tragacanth

27. The integrated rate equation for a first order reaction is
(a) x/a(a-x) = kt (b) log a/(a-x) 2.303/t
(c) log a/(a-x) kt/2.303 (d) x = kt

28. Which one of the following is used as a local anaesthetic in the formulation of parenteral products
(a) Acetic acid (b) Benzyl alcohol
(c) Ethyl alcohol (d) Sorbitol

29. In the formulation of suspensions for soft gelatine encapsulation base adsorption of the solid to be suspended is expressed as
(a) The number of grams of liquid base required to produce a capsulatable mixture when mixed with 1 gm of solid
(b) The number of ml of liquid base required to produce a capsulatable mixture when mixed with 1 gm of Solid
(c) The number of grams of solid base required to produce a capsulatable mixture when mixed with 1 gm of solid
(d) The number of mgs of liquid base required to produce a capsulatable mixture when mixed with 10 gms of solid

30. The drug that binds to AT_1 receptor with high affinity is
(a) Pinacidil (b) Valsartan
(c) Moexipril (d) Ranolazine

31. A person taking Nitro-glycerine consumes alcohol The drug interacts with alcohol the effect seen is
(a) Severe hypotension and collapse
(b) Drowsiness
(c) Anticoagulant effect
(d) Hypertension

32. The biogenetic origin of methyl substitution at N_1, N_2 and N_7 in Caffeine molecule is
(a) S-adenosyl methionine
(b) S-methyl
(c) S-methyl cysteine
(d) Adenosyl mono phosphate

33. In WHO guidelines for the herbal drugs, contaminants include
(a) Purines and Pyrimidine bases
(b) Amino acids
(c) Pentoses
(d) Pesticidal residues, Arsenic, Heavy metals, Microbial load

34. The ratio of lecithin to sphingomyelin in amniotic fluid is measured
(a) To obtain neonatal lipid profile

(b) To assess fetal maturity and respiratory distress syndrome
(c) To obtain age of the fetus
(d) As a diagnostic marker for Tay-Sach's disease

35. Diagnostic strips such as Diastrix/Clinistix, used commonly to monitor diabetes, worked on which of the following principles
(a) The strips are coated with glucose oxidase, peroxidase and o-toluidine. Any glucose in the test solution when exposed to the strips, gets oxidized leading to the release of hydrogen peroxide, the latter in turn oxidises to o-toluidine to yield a blue colour
(b) The strips are coated with phenolphthalein analogue, which when exposed to acidic glucose solution, yield a blue colour
(c) The strips are coated with glucose epimerase and thymol blue, which when exposed to glucose, epimerize resulting in blue colour
(d) The strips are coated with leucine synthase and ninhydrin. Glucose, if any in the test solution gets converted into amino acids, which in turn react with ninhydrin to yield its blue colour

36. Chemotaxis is a phenomenon that refers to
(a) Directed movement in response to a chemical stimulus
(b) Taxonomic classification of biochemical
(c) Large in-flux of a chemical molecule within bacterial cells
(d) Adherence of bacterial proteins to host cells

37. The usefulness of 5-fluorouracil as an antitumour agent can be attributed to one of the following mechanisms
(a) It inhibits hypoxanthine guanine phosphoribosyl transferase directly
(b) It is a prodrug that gets converted to fluoro-2'-deoxy uridylic acid, which is a suicide substrate for thymidylate synthase
(c) It gets incorporated into RNA leading to faulty transcription and translation into non-standard amino acids
(d) It gets converted into tetrafluoro uridylate, which inhibits purine nucleoside phosphorylase

38. Gossypol a compound which has received major attention as a male contraceptive
[P] Is a hydroxylated dinaphthalene derivative found in cotton seed oil
[Q] Is an oryzanol ester, found in rice bran oil
[R] Exhibits toxicity such as hypokalaemia induced paralysis
[S] Acts as an androgen antagonist
Identify the correct statements
(a) [Q], [R] (b) [P], [S]
(c) [Q], [5] (d) [P], [R]

39. Acetylated benzylamine upon chlorosulfonation, amidation and hydrolysis results in a product which is used as an acetate. It is
[P] Is Mafenide
[Q] Is N-sulfanilyl acetamide
[R] For ophthalmic Infections
[S] Is 4-amino methyl benzene sulphonamide and not a true sulphanilamide
Identify the correct statements
(a) [P], [S] (b) [Q], [R] (c) [Q], [S] (d) [P], [R]

40. Two of the following compounds give 3 signals in NMR spectroscopy. Choose the correct combination
[P] CH_3-COOH **[Q]** CH_3-CH_2-NH_2
[R] CH_3-OH **[S]** CH_3-CH_2-CH_2 CI
Identify the correct statements
(a) [P], [Q] (b) [Q], [S] (c) [Q], [R] (d) [P], [R]

41. Conductance cells for conductivity measurements can be made from two of the following metals
[P] Mercury **[Q] Sodium**
[R] Platinum **[S] Stainless steel**
Identify the correct statements
(a) [P], [R] (b) [Q], [S] (c) [R], [S] (d) [P], [Q]

42. In aldehydes, the -C=0 stretch and the -C-H stretch are approximately
[P] $1725cm^{-1}$ **[Q]** $1660\ cm^{-1}$
[R] $2750\ cm^{-1}$ **[S]** $3300\ cm^{-1}$
Identify the correct statements
(a) [Q], [S] (b) [Q], [R] (c) [P], [R] (d) [P], [S]

43. Schedule C and Schedule 'N' as per the Drugs and Cosmetics Act deal with the following
[P] Standards for cosmetics
[Q] Biological and special products
[R] Life period of drugs
[S] List of minimum equipment's for the efficient running of a pharmacy
Identify the correct statements
(a) [P], [Q] (b) [Q], [5] (c) [R], [S] (d) [P], [R]

44. Abrasive and humectant compounds used in the formulation of moth paste are
[P] Dicalcium phosphate
[Q] Sodium Lauryl sulphate
[R] Sorbitol syrup
[S] Tragacanth
Identify the correct statements
(a) [P], [R] (b) [Q], [S] (c) [P], [Q] (d) [R], [S]

45. Which two of the following types of techniques are used for depot formulation
[P] Dissolution controlled
[Q] Encapsulation type
[R] Solubilization
[S] Parenteral suspensions
Identify the correct statements
(a) [P], [Q] (b) [Q], [R] (c) [P], [S] (d) [P], [R]

46. GABA, an important transmitter in the brain
[P] Is an inhibitory transmitter
[Q] is an excitatory transmitter
[R] Increases chloride conductance
[S] Is antagonized by Naloxone
Identify the correct statements
(a) [P], [Q] (b) [Q], [R]
(c) [P], [R] (d) [R], [S]

47. Atovaquone when combined with Proguanil
[P] Is highly effective and well tolerated
[Q] Is not well tolerated
[R] Antagonism is observed
[S] Resistance is reduced
Identify the correct statements
(a) [P], [Q] (b) [P], [S] (c) [R], [S] (d) [Q], [R]

48. G-CSF a myeloid growth factor
[P] Exhibits action similar to that of folic acid
[Q] Has a remarkable ability to mobilize hemopoietic stem cells
[R] Is activated by tPA
[S] Activates a phagocytic activity of mature neutrophils and prolongs their survival circulation
Identify the correct statements
(a) [Q], [S] (b) [P], [Q] (c) [Q], [R] (d) [R], [S]

49. Microscopical characters of cardamom are
[P] Very thin membranous arillus enveloping the seed and composed of several layers of collapsed cells, yellow in colour containing oil
[Q] Presence of anomocytic stomata on the epidermis of pericarp and mesocarp and containing lignified reticulate parenchyma
[R] Vittae, the secretory canals contain volatile oil and are brown in colour
[S] Inner epidermis of the pericarp are made up of polygonal tubular cells. Mesocarp includes few Browns to yellow coloured resinous cell
Identify the correct statements
(a) [Q], [R] (b) [Q], [S] (c) [P], [S] (d) [P], [R]

50. Two of the following attributes are characteristic to a natural drug obtained from Syzygium aromaticum
[P] Quadrangular stalked portion- the hypanthium, surmounted by four divergent lobes of sepals which surround a globular head
[Q] Powdered drug shows fragments of hypanthium showing the epidermis and the parenchyma containing large oil glands, singly occurring short fibres, cluster crystals of calcium oxalate
[R] Aromatic, pungent, globular berries, remains of stigma at the apex. Kernel white and hollow at the Centre, consists of perisperm and endosperm
[S] Tubular epidermal cells, followed by thin-walled parenchymatous hypodermis with rectangular stone Cells. Pericarp and perisperm containing oil glands, abundant starch grains
Identify the correct statement
(a) [Q], [R] (b) [P], [Q] (c) [R], [S] (d) [P], [S]

51. Two metabolites that could transiently accumulate as result of inhibition of squalene synthase are
[P] Dimethyl allyl pyrophosphate
[Q] Cholesterol
[R] Farnesyl pyrophosphate
[S] Prednisolone
Identify the correct statements
(a) [P], [R] (b) [P], [S]
(c) [Q], [R] (d) [P], [Q]

52. Two possible targets against which inhibitors can be designed for use in diabetes treatment are
[P] Carbonic anhydrase
[Q] Insulin
[R] Glycogen phosphorylase
[S] Glucose-6-phosphatase
Identify the correct statements
(a) [Q], [S] (b) [R], [S] (c) [P], [R] (d) [Q], [R]

53. Two important advantages of using micro-organisms for bio-transformations in drug synthesis are
[P] Having been produced from micro-organisms, they are certain to have antibacterial
[Q] They are abundant in nature and hence reduce the processing cost significantly
[R] They produce the specific stereoisomer only
[S] They are highly selective and therefore yield products with high purity
Identify the correct statements
(a) [P], [Q] (b) [Q], [R] (c) [P], [S] (d) [R], [S]

54. Aminotransferases are directly involved in the biosynthesis of
[P] Aspartate [Q] Alanine
[R] Oleate [S] 3-phosphoglycerate
Identify the correct statements
(a) [Q], [S] (b) [P], [Q] (c) [P], [R] (d) [Q], [R]

55.

Group-I Reactions	Group-II Names
1. p-nitro benzaldehyde and acetone) to form 1-(4-nitrophenyl-3-oxo-butene)	[P] Claisen-Schmidt condensation
2. Isobutyl benzene is treated with acetyl chloride and anhydrous AICI,	[Q] Michael condensation
3. Pregnenolone acetate is saponified and then treated with an aluminium alcoholate to yield progesterone	[R] Friedel Crafts acylation
4. Benzelacetone and 4-hydroxy coumarin in presence of pyridine	[S] Oppenauer oxidation

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

56. N-substitution of 4-phenyl piperidine 4-ethyl-carboxylate derivatives results in analgesics with varying activities. Match the substitutions with analgesics

Group-1 Substitution at N	Group-II Analgesics
1.-CH_3	[P] Fentanyl
2. -CH_2 -CH_2 –(C_6H_4) – NH_2	[Q] Diphenoxylate
3. -CH_2 -CH_2 -C-(C_6H_5)$_2$ -CN	[R] Pethidine
4. -CH_2 -CH_2 -C_6H_5	[S] Anileridine

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

57.

Group-1 Drugs	Group-II Nature and Function
1. Colestipol hydrochloride	[P] Pyridazino – diazepine derivative, angiotensin converting enzyme inhibitor
2. Clebopride	[Q] Benzyl piperidine derivate, antiemetic
3. Cilazapril	[R] Benzophenone derivative, topical sun screening substance
4. Mexenone	[S] Granular copolymer of tetra ethylene and Epichlorohydrin, hypolipidemic

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

58.

Group-1	Group-II
Principle involved	Instrument used
1. Excitation of electrons	[P] ESR spectrometer
2. Electron impact bombardment	[Q] IR spectrometer
3. Molecular vibration	[R] Mass spectrometer
4. Splitting of electron's magnetic energy	[S] UV spectrometer

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

59.

Group-1	Group-II
Drug	Reagent for Assay
1. Albendazole	[P] Cerric ammonium sulphate
2. Isoniazid	[Q] Sodium nitrite
3. Sulfacetamide sodium	[R] Perchloric acid
4. Paracetamol	[S] Potassium bromates

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

60.

Group-1	Group-II
Method adopted	Physical state of sample used
1. Gas chromatography	[P] Solution
2. Infra-red	[Q] Crystal
3. HPLC	[R] Solid liquid or gas
4. X-Ray diffraction	[S] Liquid or gas

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

61.

Group-1	Group-II
Film defects	Explanation
1. Orange peel effect	[P] Inadequate spreading of the coating solution before Drying causes a bumping effect on the coating
2. Blistering	[Q] It is the result of drying coated tablets in ovens, due to too Rapid evaporation of the solvent from the core and the Effect of high temperature on the strength, elasticity and adhesion of the film.
3. Cracking	[R] Occurs when the two-processing temperature used is too high for a particular formulation
4. Bloom	[S] Occurs if internal stress in the film exceeds the tensile Strength of the film

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

62.

Group-1	Group-II
Term	Example
1. Hydrophilic suppository base	[P] Nitrocellulose
2. Polymorphism	[Q] Titanium dioxide
3. Film former used in the formation of nail lacquer	[R] Cocoa butter
4. Opaquant extender	[S] Polyethylene glycol

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

63.

Group-1	Group-II
Drug	Type of action
1. Toremifene	[P] Inhibitor of adrenal and gonadal steroidogenesis
2. Flutamide	[Q] -glucosidase inhibitor
3. Ketoconazole	[R] Androgen receptor antagonist
4. Miglitol	[S] Selective estrogen receptor modulator

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

64. **The activities of certain object drugs are increased by certain precipitant drugs.**
Choose the correct combination

Group-1 Object drug	Group-II Precipitant Drugs
1. Amines in foods	[P] Allopurinol

2. Alcohol	[Q] MAO inhibitor
3. Cefoxitin	[R] Disulfiram
4. Azathioprine	[S] Probenecid

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

65.

Group-1 Drug	Group-II Mechanism
1. Cinoxacin	[P] codon incorporation
2. Amikacin	[Q] Inhibition of DNA gyrase
3. Nevirapine	[R] Deaminates asparagine
4. Crisantaspase	[S] Non-nucleoside reverse transcripts inhibitor

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

66.

Group-1	Group-II
Plant Hormone Type	Chemical Substance
1. Auxin	[P] Abscisic acid
2. Gibberellin	[Q] NAA
3. Cytokinin	[R] GA_3
4. Growth inhibitor	[S] 6-furfuryl adenine

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

67.

Group-1	Group-II
Crude Drugs	Chemical test
1. Etoposide	[P] Add a solution of potassiumpermangante and warm yield an odour of benzaldehyde
2. Sumatra benzoin	[Q] To an alcoholic solution, add a solution of p-dimethyl amino benzaldehyde yields a blue colour
3. Ergot Powder	[R] A solution in HCI acid when treated with Pot. ferricyanide Yield and yellow colour
4. Papaverine	[S] Alcoholic solution of the drug is treated with strong copper acetate solution gives a brown precipitation

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

68.

Group-1	Group-II
Synonyms of Crude drugs	Chemical nature of constituents
1. Jesuits bark or Peruvian bark	[P] Curare alkaloids
2. Ma-huang	[Q] Tropane alkaloids
3. Deadly night-Shade leaf	[R] Quinoline alkaloids
4. South American arrow poison	[S] Phenyl ethyl amine alkaloids

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

69.

Group-1	Group-II
Aberrant protein	Disease
1. Glucose-6-phosphate dehydrogenase	[P] Haemolytic anaemia
2. Prion	[Q] B-Thalassemia
3. β-Subunit of haemoglobin	[R] Scrapie
4. Phenyl alanine hydroxylase	[S] Phenyl ketonuria

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

70.

Group-1	Group-II
Antibiotic	Test organism for microbiological assay
1. Gentamicin	[P] Bacillus cereus
2. Tetracycline	[Q] Bacillus subtilis
3. Streptomycin	[R] Micrococcus luteus
4. Bacitracin	[S] Staphylococcus epidermidis

(a) 1-[P], 2-[Q], 3-[R], 4-[S]
(b) 1-[R], 2-[P], 3-[S], 4-[Q]
(c) 1-[Q], 2-[R], 3-[P], 4-[5]
(d) 1-[S], 2-[P], 3-[Q], 4-[R]

Common Data For (Q.71-Q.73)

All anthracycline antibiotic Doxorubicin, is an important anticancer drug

71. **Doxorubicin in isolated from**
(a) Streptococcus pyogenes
(b) Staphylococcus aureus
(c) Clostridium difficile
(d) Streptomyces Peucetius var caesius

72. **Doxorubicin acts by**
(a) Inhibiting asparaginase
(b) Inhibiting topoisomerase II

(c) Inhibiting adenosine deaminase
(d) Inhibiting functions of microtubules

73. A significant adverse action of doxorubicin in
(a) A potentially irreversible cumulative dose related cardiac toxicity
(b) Haematuria
(c) Sedition
(d) Fluid retention

Common Data For (Q.74-Q.75)

An antidiabetic drug is 1-[4-[215-chloro-2-methoxy-benzamido) ethyl]-phenyl sulfonyl]-3-cyclohexylurea

74. The generic name of the antidiabetic drug is
(a) Glibenclamide (b) Gliclazide
(c) Glipizide (d) Gliquidone

75. Official assay for the drug is by titration using a standard solution of
(a) Sodium nitrite (b) Iodine
(c) Potassium permanganate (d) Sodium hydroxide

Statement for linked answer Questions 76 and 77

Imidazole is treated with -bromo-2, 4 dichloro aceto phenone. The resulting product on reaction with N_aBH_4 gives and intermediate X, X is then treated with NaH followed 2,4 dichloro benzyl bromide to get an antifungal drug

76. The intermediate compound X is
(a) 1-(2.4 Dicholoro phenyl)-2-(1-imidazolyl)-methanol
(b) 1-(2.4 Dicholoro butyl)-2-(2-imidazolyl)-ethanol
(c) 1-(2,4 Dicholoro acetophenyl)-2-(1-imidazolyl)-ethanol
(d) 1-(2.4 Dicholoro phenyl)-2-(1-imidazolyl)-ethanol

77. The antifungal drug obtained is
(a) Miconazole (b) Luliconazole
(c) Saperconazole (d) Butenafine

Statement for linked answer Questions 78 and 79

The calculated λ_{max} for 2,4 Penta diene is 222 nm. Choose the correct base value and increment due to the substituent

78. The base value (in nm) is
(a) 215 (b) 210 (c) 217 (d) 205

79. The increment due to the substituent (in nm) is
(a) 7 (b) 12 (c) 17 (d) 205

Statement for linked answer Questions 80 and 81

A solution of the drug was freshly prepared at a concentration of 600 mg/ml After 30 days of Storage at 25°C, the drug concentration in the solution was found to be 150 mg/ml The drug can be assumed to undergo zero order kinetics

80. The rate constant is
(a) 15 mg/ml/day (b) 1.5 mg/ml/day
(c) 0.15 mg/ml/day (d) 7.5 mg/ml/day

81. Half-life of the drug solution under this condition is
(a) 2 days (b) 20 days
(c) 10 days (d) 100 days

Statement for linked answer Questions 82 and 83

There are many types of antidepressant drugs and many of them are long acting, while some are short acting

82. An example of a short acting antidepressant drug is
(a) Fluoxetine (b) Valproate
(c) Etorphine (d) Moclobemide

83. The drug selected above, acts by
(a) Inhibiting MAO-A
(b) Inhibiting NA/5HT reuptake
(c) Blocking 5-HT_3 receptors
(d) Inhibiting ACE

Statement for linked answer Questions 84 and 85

Myristica frangrans belongs to the family Myristicaceae

84. A part of the fruit of Myristica franrans Houtt is
(a) Testa (b) Plumule (c) Mace (d) Anther

85. The substance present in that part selected above, which produces a red colour with iodine is
(a) Myristicin (b) Safrole
(c) Elemicin (d) Amylodextrin

Answer Key

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

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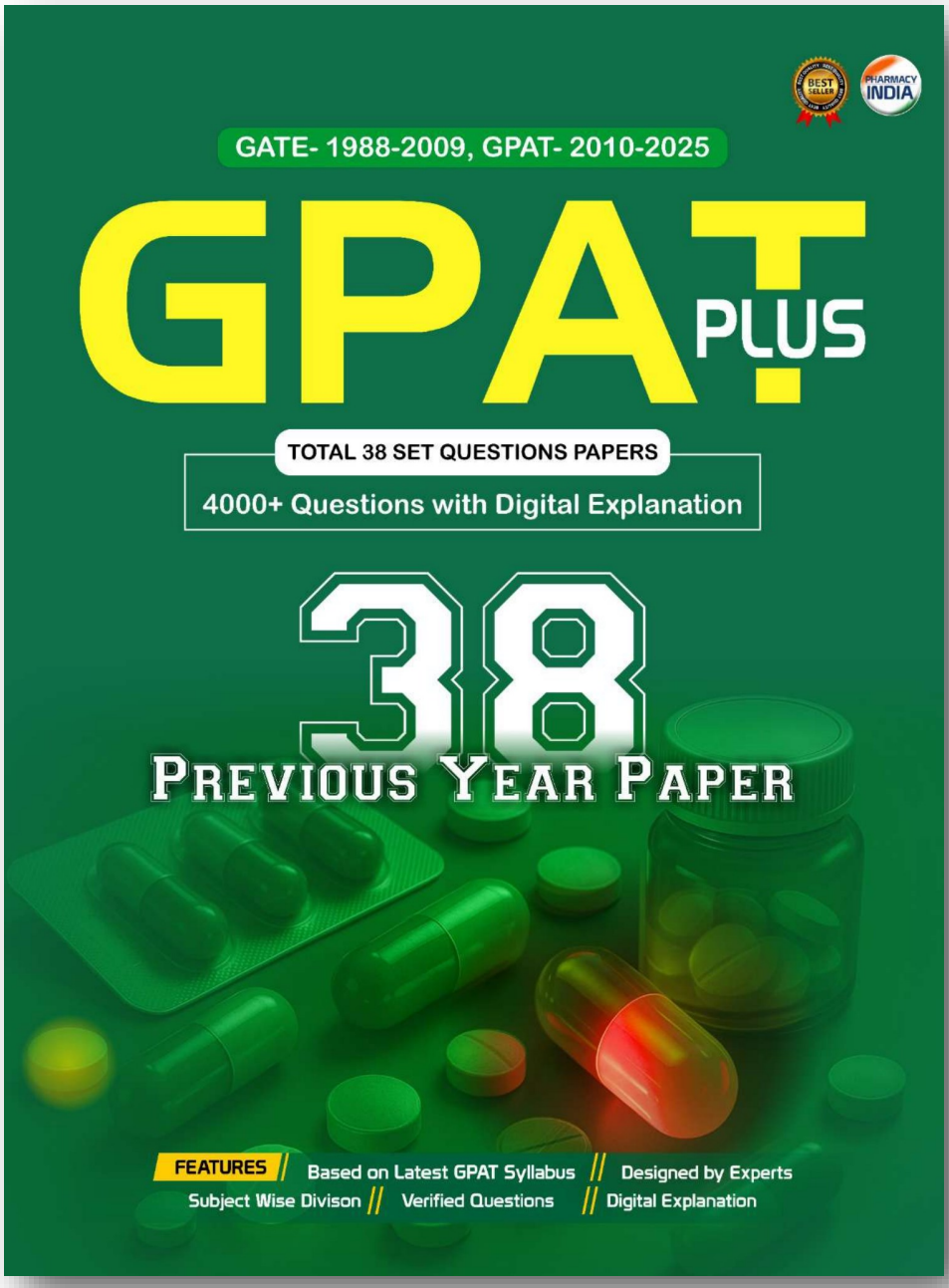

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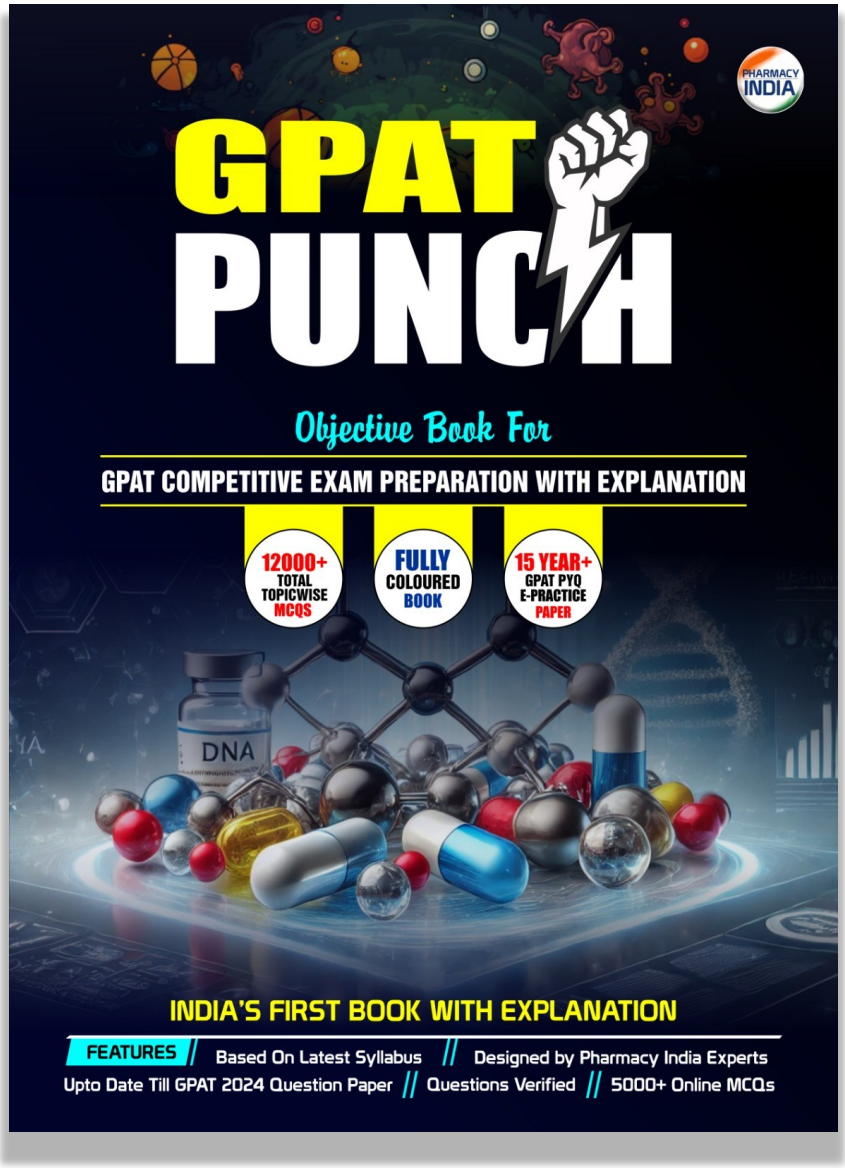

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