

GATE-1990

PART - A Section-I (Choose The Correct Answer)

1. Multiple choice question

i. Reserpine on hydrolysis gives

- (a) Reserpine acid Methyl alcohol Trimethoxy cinnamic acid
- (b) Reserpine acid acetic acid Trimethoxy benzaldehyde
- (c) Reserpine acid Methyl alcohol Trimethoxy benzoic acid
- (d) Reserpine acid Methyl alcohol - Trimethoxy cinnamaldehyde

ii. Papaverine is

- (a) 6, 7-dimethoxy-1-(3, 4-dimethoxy benzyl) isoquinoline
- (b) 6, 7 dimethoxy-1-(3, 4-dimethyl benzyl) isoquinoline
- (c) 6, 7-dimethoxy-1-(3, 4' dimethoxy benzyl) quinolone
- (d) 6, 7-dimethoxy-1-(3, 4-dimethyl benzyi) quinolone

iii. Titanium dioxide is commonly present in

- (a) Vanishing cream
- (b) Sunscreen cream
- (c) Aqueous calamine cream
- (d) Ophthalmic cream

iv. Powder ergot when treated with sodium hydroxide solution develops

- (a) A strong odour of ammonia
- (b) A strong odour of trimethyl amine
- (c) A strong odour of indole
- (d) A strong odour of urea

v. Salbutamol sulphate IP is assayed by

- (a) Direct titration with standard sodium hydroxide solution
- (b) Direct titration with standard sodium hydrochloric acid
- (c) A known amount of standard acid is added and excess is titrated with standard alkali
- (d) Dissolve in glacial acetic acid and titrated with standard perchloric acid using orceins blue

vi. Heparin prevent blood coagulation by

- (a) Inhibiting thrombin catalyzed conversion of fibrinogen to fibrin
- (b) Precipitate blood calcium there by prevent coagulation reactions
- (c) Inhibiting enzyme reactions
- (d) Converting ionized calcium into chelation

vii. For the registration of pharmacist in the various states, the Pharmacy Act provide for the constitution of

- (a) Registration tribunals
- (b) Registrar of Co-operative societies
- (c) Registrar of state pharmacy council
- (d) Registrar of central pharmacy council

viii. Powdered this is dried at temperature

- (a) Not exceeded 60°C
- (b) 65 °C
- (c) 75°C
- (d) 100 °C

ix. Prazepam differ in structure from diazepam by

- (a) N-methyl group
- (b) N-cyclopropyl group
- (c) N-cyclopropyl methyl group
- (d) N-propyl group

x. The mechanism of action of Rifampicin involve

- (a) Inhibition of bacterial DNA directed RNA polymerase
- (b) Inhibition of mycolic acid synthesis
- (c) Inhibition of protein synthesis
- (d) Inhibition of trans peptidase

xi. The UV visible region in the electromagnetic spectrum of radiation is

- (a) 200-400 nm
- (b) 300-660 nm
- (c) 400-800 nm
- (d) 200-800 am

xii. The Mantoux test uses

- (a) Okt tuberculin
- (b) Diptheria toxins
- (c) Serum antigens
- (d) Polysaccharide antigens

xiii. Rutesort is a machine used to sort out

- (a) Coated tablets
- (b) Filled capsule
- (c) Sealed ampoules
- (d) Sealed containers

xiv. The volume of distribution of drugs is

- (a) An expression of total body volume
- (b) A measure of total fluid volume
- (c) A relationship between the total amount of drug in the body and the concentration of the drug in the blood
- (d) Proportional to bioavailability of the drug

xv. Resolution of a spectrophotometer is

- (a) Its wave length range
- (b) Its ability to distinguish adjacent absorption bands
- (c) Its capacity for its continuous use
- (d) Its power to gather light according to source

xvi. Haloperidol is a major tranquillizer. It belongs to the class of

- (a) Carbamates
- (b) Propanediol
- (c) Butyrophenone
- (d) Phenothiazine

xvii. Glandular hair growing having a unicellular or occasionally a short uniseriate pedicel with a unicellular or bicellular terminal gland is characteristics of

- (a) Senna leaves
- (b) Belladonna leaves
- (c) Datura stramonium leaves
- (d) Digitalis Purpurea leaves

xviii. Skeletal muscle relaxation produced by the drug is effectively antagonized by

- (a) Diazepam
- (b) Succinylcholine
- (c) Tubocurarine
- (d) Aminophylline

xix. Vitamin D₂ is

- (a) 22, 23-dihydro -5, 6 cis-ergocalciferol
- (b) 5, 6 cis- cholecalciferol
- (c) 7-dehydrocholesterol
- (d) 21, 24-dihydro 5, 6 cis ergocalciferol

- xx. **R.W.C. is used to identify the strength of an**
 (a) Antibiotics (b) Antipyretics
 (c) Antiseptic (d) Anti-inflammatory
- xxi. **The colligative property of a solution is related to the**
 (a) Total number of solute particles
 (b) pH
 (c) Number of ions
 (d) Number of ingredients
- xxii. **The essential structural unit for the anthelmintics activity of Mebendazole is**
 (a) Benzoyl group (b) Benzimidazole
 (c) Methyl carbamates (d) Imidazole
- xxiii. **The anticoagulant activity of heparin sodium injection IP is estimated by using**
 (a) Female rats (b) Male rats
 (c) Rabbits (d) Sheep
- xxiv. **The biological half-life of a drug (first order kinetics) is represented by**
 (a) $1/K$ (b) $\log K$ (c) $0.693/K$ (d) $2.303/K$
- xxv. **Infra-red spectrometry is a convenient**
 (a) Drug receptor interaction method for understanding of
 (b) Functional group identification
 (c) Physiochemical properties
 (d) Conformational properties
- xxvi. **Most commonly used antimicrobial agent for intra-peritoneal dialysis fluid is**
 (a) Chlorocresol (b) Benzalkonium chloride
 (c) Isopropyl alcohol (d) None of the above
- xxvii. **In the steroid nucleus, there are oxygen**
 (a) Six chiral center with nucleus i.e. 5,8,9,10,13 and 14
 (b) Seven chiral center with nucleus i.e. 3,8,9,10,11, 12 and 14
 (c) Six chiral center with nucleus i.e. 3,8,9,10,11, and 12
 (d) Six chiral center with nucleus i.e. 5,7,9,10,13, and 16
- xxviii. **Thermolabile immiscible liquid can be separated by**
 (a) Decantation
 (b) Dilution
 (c) Capacity centrifugation
 (d) Counter current distribution
- xxix. **Sulphamethoxazole is an antibacterial drug. It is a**
 (a) Short acting drug (b) Intermediate acting drugs
 (c) Long acting drugs (d) Mixed acting drugs
- xxx. **Wave number is the number of waves**
 (a) Per second (b) Per centimeter
 (c) Per inch (d) Per centimeter
- xxxi. **The raw material for the synthesis of propranolol is**
 (a) α - Naphthylamine (b) β - Naphthol
 (c) α - Naphthol (d) 1 - Naphthylaldehyde
- xxxii. **All the statement mentioned below about chloral hydrate is true EXCEPT that it**
 (a) Produces hypnosis
 (b) Produces analgesia
 (c) Produce dependence
 (d) Irritate gastric mucosa
- xxxiii. **In drug and cosmetics act and rules under their, list of substances that should be sold by retail only on prescription of registered medical practitioner is given in**
 (a) Schedule H (b) Schedule V
 (c) Schedule X (d) Schedule Q
- xxxiv. **Which is ideal combination for testing the solubility of an enteric coated capsule in alkaline medium?**
 (a) Sodium bicarbonate + Potassium hydroxide + Pepsin
 (b) Sodium bicarbonate + Sodium tauroglycocholate + Papain
 (c) Sodium bicarbonate + Pancreatin + Sodium tauroglycocholate
 (d) Sodium bicarbonate + Billirubin.
- xxxv. **Oxazepam is used in relief of psychoneurosis. It has lower incidents of side effects and reduced toxicity due to**
 (a) N-demethylation
 (b) Ring oxidation
 (c) Aromatic hydroxylation
 (d) Conjugation of 3- hydroxyl group
- xxxvi. **The rate of diffusion of drug across biological membrane is**
 (a) Directly proportional to the concentration gradients
 (b) Dependant on route of administration
 (c) Indirectly proportional to membrane thickness
 (d) None of the above
- xxxvii. **In sugar coating of tablets sub coating is done**
 (a) To prevent moisture deposition
 (b) To round the edge and build tablet size
 (c) To smoothen the surface
 (d) To prevent the tablet from breaking due to vibration
- xxxviii. **One of the detectors used in gas chromatography**
 (a) Bolometer (b) Thermal conductivity detector
 (c) Golay detectors (d) Giger Counter
- xxxix. **Alkaloids in cinchona bark are detected by**
 (a) Iodine test
 (b) Thalleoquine test
 (c) Liebermann -Burchard test
 (d) Nessler's test
- xxxx. **Of 2-amino-5-chlorobenzophenone is the convenient starting material for the synthesis**
 (a) Nitrazepam (b) Diazepam
 (c) Chloramphenicol (d) Trimethoprim

SECTION-II (Match The Following)

2. Multiple choice question

- i. **Given below are some of the associate colloids. Match the correct type from the list [F] to [5]**
- | | |
|-------------------------------------|--------------|
| 1. Sodium lauryl sulphate | [P] Anionic |
| 2. Cetyl trimethyl ammonium bromide | [Q] Cationic |
| 3. Polyoxy ethylene lauryl ether | [R] Nonionic |

4. Dimethyl dodecyl ammonio propane sulphate

[S] Ampliolytics

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

ii. Given below are the essential pharmacophore for the drugs mentioned from [P] to [T]. match them

1. 1.4 benzodiazepine [P] Pindolol
2. B-lactum fused with thiazolidine [Q] Amoxycillin
3. Ethylene diamine [R] Ethambutol
4. Aryloxypropanolamine [S] Salbutamol
[T] Oxazepam

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

iii. The drugs mentioned below are produced by species mentioned from [P] to [T]

1. Rifampicin [P] Streptomyces griseus
2. Nystatin [Q] Bacillus polymyxa
3. Amphotericin B [R] Streptomyces mediterranei
4. Candicidin [S] Streptomyces nodosus
[T] Streptomyces noursei

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

iv. Given below are some important drugs. Find out the correct constitution listed [P] to [T] derived from them

1. Cephalis ipecacuanha [P] Cineole
2. Papaver somniferum [Q] Safrole and myresticin
3. Cascara sagrada [R] Morphine
4. Myristica fragrans [S] Antraquinone glycoside
[T] Emetine

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

v. The side chain responsible for the biological activity of drug listed from [P] to [T] are given below. Match them correctly

1. $\text{—NH—CH(CH}_2\text{—CH}_2\text{—CH}_2\text{—CH}_2\text{)—N(C}_2\text{H}_5\text{)}_2$ [P] Amodiaquine
2. $\text{—CH}_2\text{—CH}_2\text{—SO}_2\text{—CH}_2\text{—CH}_3$ [Q] Tinidazole
3. $\text{—O—CH}_2\text{—CH}_2\text{—N(CH}_3\text{)}_2$ [R] Chloroquine
4. $\text{—NH—CH(OH)—CH}_2\text{N(C}_2\text{H}_5\text{)}_2$ [S] Diphenhydramine
[T] Chlorpromazine

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

vi. The following form under schedule A of the drug and cosmetics act utilized for applying for licenses listed [P] to [T], match them

1. Form 8 [P] Application to import drugs for personal use

2. Form 12 A [Q] Applications for grant of license to sell stock or distribute drug

3. Form 19 [R] Application to import biological products

4. Form 24 C [S] Application to manufacture homeopathy Drugs

[T] Application to important drugs for research purposes

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

vii. Listed below are the instruments used for measuring the factors given in [P] to [T]. Match them

1. Rotational viscometer [P] Shear rate/shear stress and viscosity
2. Penetrometer [Q] Melting point
3. Hanson-paddle equipment [R] for consistency and hardness of relatively Rigid semisolids
4. Glass electrode [S] Dissolution of granules and tablets
[T] pH indicating electrode

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

viii. Symptoms for the following diseases are indicated from [P] to [S]. Match them

1. Cushing's syndrome [P] Hyperthyroidism
2. Addison's disease [Q] Inflammatory bowel
3. Grave's disease [R] Decreases production of cortisol
4. Crohn's disease [S] Increased production of cortisol

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

ix. Some possible causes are mentioned in [P] to [T] for the following defects during the film coating of tablets, match them

1. Chipping [P] poor spreading of sprayed droplets
2. Cracking [Q] Over heating during spraying
3. Orange peel [R] High internal stresses in film
4. Blistering [S] Excess coating process
[T] Precipitate of polymer due to high Temperature or poor solvent

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

x. Match the biological activity listed under [P] to [S] for following drugs

1. 0-2-naphthyl m, N-dimethylthio carbanilaste [P] Antineoplastic

2. Trans-1, 4, 5, 6-tetrahydro-1-methyl-2[2-(2-thienyl) vinyl]

Pyrimidine

[Q] Anthelmintic

3. 2, 4-diamino-5-(p-chlorophenyl)-6-ethylpyrimidine

[R] Antimalarial

4. p-(di-2-chloroethyl)aminophenyl butyric acid

[S] Antifungal

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

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

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

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

xi. Match the correct method of sterilization listed [P] to [T] for the following drugs

1. Tetracycline injection [P] Sterilized by dry heat

2. Insulin injection [Q] Sterilized by heating with bactericide

3. Quinine injection [R] Sterilized by bacterial filtration

4. Morphine injection [S] Sterilized by aseptic method
[T] Sterilized by heating in an autoclave

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

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

(c) 1-[T], 2-[Q], 3-[R], 4-[P]

(d) 1-[S], 2-[R], 3-[T], 4-[Q]

xii. Given below are the receptors and their antagonists. Match them correctly

1. GABA receptors

[P] Buprenorphine

2. Histamine H₁ receptors

[Q] Diazepam

3. Opioid receptors

[R] Ranitidine

4. B-adrenergic receptors

[S] Nifedipine

[T] Atenolol

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

(b) 1-[Q], 2-[R], 3-[P], 4-[T]

(c) 1-[T], 2-[Q], 3-[R], 4-[P]

(d) 1-[R], 2-[T], 3-[Q], 4-[S]

xiii. The names of equations for various expressions are given below. Match them correctly

1. $\log \frac{I_0}{I} = \frac{2.303}{d} \cdot c \cdot l$

[P] Mark-Houwink

2. $V = \frac{\pi r^4 \Delta P}{8 \eta l n}$

[Q] Ilkovic

3. $[n] = kM^\alpha$

[R] Poiseuille

4. $T_g = (0.5-0.67) T_m$

[S] Boyer-Beaman

[T] Beer-Lambert

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

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

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

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

xiv. The various equipments are used for size reduction of material of different nature Match them correctly

1. Rod mill [P] Sticky material

2. Fluid energy mill [Q] Abrasive material

3. Cutting mill [R] Thermo labile material

4. Revolving mill [S] Fibrous material

[T] Thermostable material

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

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

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

(d) 1-[R], 2-[T], 3-[Q], 4-[S]

xv. Match the drugs in [P] to [T] which inhibit the following enzymes

1. Carbonic anhydrase

[P] Dicloxacillin

2. Dihydrofolate synthetase

[Q] Physostigmine

3. Lactamase

[R] Acetazolamide

4. Acetylcholinesterase

[S] Sulphanilamide

[T] Ibuprofen

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

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

(c) 1-[T], 2-[Q], 3-[R], 4-[P]

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

xvi. Given below are some of the important drugs. Appropriate tests are listed in [P] to [T]. Match them correctly

1. Cardiac glycoside [P] p-dimethyl amino benzaldehyde

2. Ergot alkaloids [Q] Fluorescence test

3. Quinidine sulphate [R] Liebermann Burchard test

4. Camphor [S] 2, 4 dinitrophenyl hydrazine

[T] Benedict's test

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

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

(c) 1-[T], 2-[P], 3-[Q], 4-[S]

(d) 1-[R], 2-[T], 3-[Q], 4-[S]

xvii. The undesirable effects of the antibiotics are listed in [P] to [T] match them

1. Tetracycline

[P] Gray-baby syndrome

2. Streptomycin

[Q] Discolouration of teeth

3. Chloramphenicol

[R] Jaundice

4. Rifampicin

[S] Obesity

[T] Ototoxicity

(a) 1-[Q], 2-[T], 3-[P], 4-[R]

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

(c) 1-[T], 2-[Q], 3-[R], 4-[P]

(d) 1-[R], 2-[T], 3-[Q], 4-[S]

xviii. Choose the most appropriate starting material listed in [P] to [T] for the synthesis of the following

1. Riboflavin [P] p-anisidine

2. Progesterone [Q] 3, 4-dimethylaniline and D- ribose

3. Isoniazide [R] Diosgenin

4. Indomethacin [S] - picoline

[T] Lumiflavine

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

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

(c) 1-[T], 2-[Q], 3-[R], 4-[P]

(d) 1-[R], 2-[T], 3-[Q], 4-[S]

xix. Absorption frequency (cm) in IR spectroscopy for carbonyl group are given in [P] to [T] match them

1-COCl

[P] 1720

2. $\text{O}=\text{C}$

[Q] 1735

3.-CHO

[R] 1750

4.-CONH [S] 1776
[T] 1812

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

xx. Following are the prefixes used in nomenclature which signifies as indicated from [P] to [T] match them

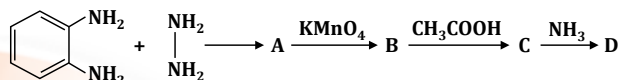
1. Levo [P] Not all the same atom
2. Ortho [Q] Rotate the plain polarized light to the left
3. Poly [R] Made up of many group
4. Hetero [S] signifies the 1: 2 positions in benzene ring
[T] Threo configuration

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

PART - B

- Classify emulsifying agents in accordance with the type of film they form at the interface. Give example for each
- Define creaming, inversion, sedimentation - instability of emulsions.
- Give the principle and procedure for the assay of Glyceryl trinitrate tablets L.P.
(a) What is the source of squill and Indian squill?
(b) In what crystalline form the calcium oxalate occurs in squill?
(c) Give the names of the adulterants of belladonna.
(d) What is the difference between Hyoscyamine and Atropine?
- (a) Give the names of the organism used in the following biological assay
1. Diphtheria antitoxin
2. Gas gangrene antitoxin
3. Tetanus Antitoxin
4. Typhoid vaccine
(b) What is 'sham test' in pyrogen testing?
- What is importance of deaeration in capsulation? How is it achieved?
- Classify neuromuscular blocking agents according to their mechanism of action
- (a) what is source of caffeine?
(b) What is its chemical name?
(c) What happened when caffeine is treated with chlorine and the resulting compound is treated with methanolic NaOH, product obtained is further boiled dilute HCl? Give Equations.
- Explain why Ranitidine, an H₂ receptor antagonist is more active and more selective than Cimetidine

- (a) Define
1. Palisade ratio
2. Stomatal number
3. Stomatal index
(b) 80 is the number of stomata per unit area. Ordinary epidermal cells present in the area. Calculate the stomata index
- (a) Outline the assay of ephedrine Hydrochloride L.P.
(b) Define standard preparation and units of activity in microbial assays of antibiotic.
- Synthesis of pyrazinamide is outlined below. Write the structure for A, B, C and D



- (a) Mention the important constitution and source of the following
1. Beeswax
2. Spermaceti
3. Wool alcohol
(b) Give the specific method for Keller-Killani test. Which of the component in the respective plant drug is detected by this test?
- Which factor alters insulin requirements?
- (a) What is an ideal antimalarial drug?
(b) What are the four different ways by which antimalarial drug exert their action?
- (a) Name the different components of the aerosol package
(b) What are different objectives behind coating of tablets?
- Give the structural activity relationship of the following drug
(a) Promethazine
(b) Chlorpromazine
(c) Thioridazine
(d) Trifluoperazine
- What is role of plasticizers in tablet coating?
- Define p indicators. Name the important p⁺ indicators
- Give synthesis of the following drugs
(a) Meprobamate
(b) Metronidazole
(c) Chlorpheniramine
- What are different methods of locating end point in potentiometric titrations?
- (a) Define
1. Hypotonic
2. Hypertonic
3. Isotonic
(b) Calculate the amount of sodium chloride required to make 100 ml of a 2% solution of the given local anaesthetic isotonic with blood serum. Molecular wt of local anaesthetic 339.5, Molar concentration of Blood = 0.030.

24. (a) What is drug regimen in combination therapy of leprosy?
(b) Why chemotherapy leprosy is hampered?
25. Give reasons for the following
(a) In the determination of Ca^{++} ions by complexometry using Erichrome black T as indicated a little magnesium EDTA is added
(b) Tetrabutyl ammonium hydroxide is the preferred titration in the titration of acidic substance by nonaqueous method
(c) Ammonia and EDTA forms complexes with metal ions like Cu^{++} . Ag butammonia is not used as a titrant in complexometry.
26. Write the merits and demerits of anabolic steroids. Mention the names of two official preparations
27. What happens when? Give equations
(a) Sodium salt of toluene p- sulphonamide is condensed with n-butyl isocyanate
(b) Benzhydrol bromide is treated with 2-dimethyl amino ethanol in presence of alkali.
(c) m-nitrobenzaldehyde is treated with butyric anhydride, the resulting compound is reduced and iodinated

Answer Key

PART (SECTION - I)

i - c	ii - a	iii - b	iv - b	v - d	vi - a	vii - c	viii - a	ix - c	x - a
xi - d	xii - a	xiii - b	xiv - c	xv - b	xvi - c	xvii - c	xviii - b	xix - a	xx - c
xxi - a	xxii - c	xxiii - d	xxiv - c	xxv - b	xxvi - d	xxvii - a	xxviii - a	xxix - b	xxx - b
xxxi - c	xxxii - a	xxxiii - a	xxxiv - c	xxxv - d	xxxvi - a	xxxvii - b	xxxviii - b	xxxix - b	xl - c

PART (SECTION - II)

i - b	ii - c	iii - d	iv - a	v - a	vi - c	vii - b	viii - c	ix - d	x - a
xi - d	xii - b	xiii - c	xiv - c	xv - d	xvi - d	xvii - a	xviii - a	xix - c	xx - d





COD AVAILABLE ON

Flipkart



amazon

meesho



GATE- 1988-2009, GPAT- 2010-2025


GPAT PLUS

TOTAL 38 SET QUESTIONS PAPERS

4000+ Questions with Digital Explanation

38

PREVIOUS YEAR PAPER



FEATURES // Based on Latest GPAT Syllabus // Designed by Experts

Subject Wise Division // Verified Questions // Digital Explanation

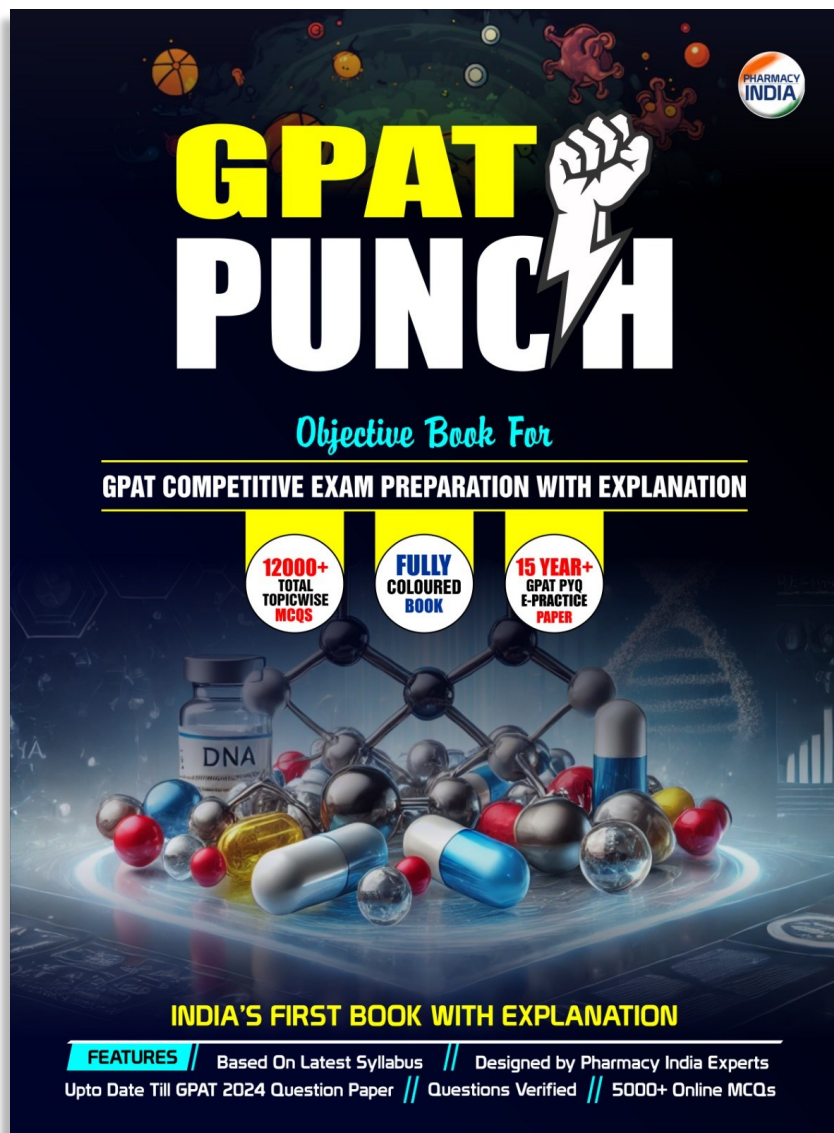
 **Contact for any Query - 6395596959**



PHARMACY INDIA
www.pharmacyindia.co.in



BEST BOOK FOR GPAT PREPATRATION



: Features :

- ⇒ 12,000+ Total Topic-wise MCQs
- ⇒ 15 Year+ GPAT PYQs E- Practice Papers
- ⇒ Full Digital Explanation
- ⇒ Based on Latest Syllabus
- ⇒ Fully Colored Book
- ⇒ India's First Book With Explanation



Download

COD AVAILABLE

amazon

Flipkart



Contact for

Sample Pdf - 9258534641

PHARMACY INDIA



Join

WhatsApp & Telegram Channel



PHARMACY INDIA

www.pharmacyindia.co.in



Tap and Download PHARMACY INDIA App



Scan and Download

SCAN ME



PHARMACY INDIA

www.pharmacyindia.co.in