

GPAT-2011

Pharmaceutics

- Which of the following isotherms are produced when the heat of condensation of successive layers is more than the heat of adsorption of first layer
(a) Type III and IV (b) Type II and V
(c) Type I and III (d) Type III and V
- Which of the following forces contribute to stability of charge-transfer complexes
(a) Resonance forces
(b) Resonance and London dispersion forces
(c) Dipole-dipole interactions and London dispersion forces
(d) Resonance forces and dipole-dipole interactions
- Which of the followings act as a non ionic emulsifying agent
(a) Triethanolamine oleate
(b) Polyoxyethylene sorbitan monooleate
(c) N-Cetyl N-ethyl morpholinium ethosulfate
(d) Dioctyl sulphosuccinate
- The minimal effective flow rate of air in laminar flow hood should be not less than how many cubic feet per minute
(a) 10 (b) 50 (c) 100 (d) 1000
- Which of the following Schedules include shelf life of drugs
(a) Schedule F (b) Schedule M
(c) Schedule G (d) Schedule P
- Which of the following pumps is used in handling of corrosive liquids
(a) Turbine pump (b) Volute pump
(c) Air binding pump (d) Peristaltic pump
- By addition of which of the followings the shells of soft gelatin capsules may be made elastic
(a) Polyethylene glycol (b) Sorbitol
(c) Propylene glycol (d) Dibutyl phthalate
- Convert 90% v/v alcohol to Proof strength. Choose the correct answer
(a) 57.77° under proof (b) 57.77° over proof
(c) 47.41° over proof (d) 47.41° under proof
- Department of Transport Test (DOT) is performed for which of the followings
(a) Strip packing (b) Aerosols
(c) Injection packing (d) Glass containers
- What is the Heat of vaporization of water at 100°C
(a) 2790 cal/mole (b) 7290 cal/mole
(c) 7920 cal/mole (d) 9720 cal/mole
- Determine the correctness or otherwise of the following
Assertion [A] and the Reason [R]
Assertion [A]: For a pharmaceutical powder true density is greater than the granule density
Reason [R]: Mercury displacement used for determining granule density penetration of liquid into internal pores of the particles
(a) [A] is true but [R] is false
(b) Both (A) and [R] are false
(c) Both [A] and [R] are true and [R] is the correct reason for [A]
(d) Both [A] and [R] are true but [R] is not the correct reason for [A]
- Determine the correctness or otherwise of the following statements
[P] Rheopexy is the phenomenon when a sol forms gel more readily when sheared gently
[Q] In a rheopectic system, sol is the equilibrium form
[R] Rheopexy is a phenomenon when a sol forms gel when the material is kept at rest
(a) [R] is true but [P] and [Q] are false
(b) [P] is true but [Q] and [R] are false
(c) [P], [Q] and [R] all are false
(d) [P], [Q] and [R] all are true
- Define Plasmapheresis. Choose the correct answer
(a) The process of collecting plasma and returning the red blood cells concentrate to the donor
(b) The process of collecting red blood cells concentrate and returning the plasma to the donor
(c) The process of separating white blood cells from blood
(d) The process of generating artificial blood plasma expanders
- Molecules in the smectic liquid crystals are characterized by which one of the followings
(a) Mobility in three directions and rotation in one axis
(b) Mobility in two directions and rotation in one axis
(c) Mobility in two directions and no rotation
(d) Mobility in three directions and no rotation
- Choose the correct sequence of Moisture vapor Transmission Rate in packaging materials
(a) Paper Aluminium foil > PVC > PVdC
(b) Aluminium foil > PVC > PVdC > Paper
(c) Aluminium foil PVdC > PVC > Paper
(d) Paper > PVC > PVdC > Aluminium foil
- How many mL of 50% (w/v) dextrose solution and how many mL of 5% (w/v) dextrose solution are required to prepare 4500 ml of a 10 (w/v) solution
(a) 500 ml of 50% and 4000 ml. of 5%
(b) 1000 mL of 50% and 3500 ml of 5%
(c) 4000 ml of 50% and 500 mL of 5%
(d) 1500 mL of 50% and 3000 mL of 5%

17. A drug is administered to a 65 Kg patient as 500 mg tablets every 4 hours. Half-life the drug is 3 h, volume of distribution is 2 liter/Kg and oral bioavailability of the drug is 0.85. Calculate the steady state concentration of the drug
(a) 5.05 mcg/ml (b) 4.50 mcg/ml
(c) 5.53 mcg/ml (d) 3.00 mcg/ml
18. P-Glycoprotein pump is responsible for which one at the followings
(a) Transporting the drugs from the enterocytes into the gut lumen
(b) Transporting the drugs from gut lumen into enterocytes
(c) Transporting the drugs from oral mucosa into blood capillaries
(d) Transporting the drugs from Peyer's patches into the gut lumen
19. Statement [X] Hofmeister series grades coagulating power of electrolytes as per their ionic size Statement [Y] The relative coagulating power is given by [P] $Al^{+++} > Ba^{++}$ [Q] $Li^{+} > F^{-}$ [R] $NH^{+} > Na^{+}$
Choose the correct statement
(a) Statement [X] is true but [P], [Q] and [R] are false in Statement [Y]
(b) Statement [X] is false and [P], [Q] and [R] are false in Statement [Y]
(c) Statement [X] is true and [Q] and [R] are false in Statement [Y]
(d) Statement [X] is false and [P] is false in Statement [Y]
20. The first stage of wetting on addition of a granulating agent to the powders is characterized by which one of the followings
(a) Capillary state (b) Pendular states
(c) Funicular state (d) Droplet state
21. Larger values of K_y in the Heckel Plot indicate formation of what quality of tablets
(a) Harder tablets (b) Solter tablets
(c) Fluffy tablets (d) Brittle tablets
22. The degree of flocculation of a suspension is 15 and the sedimentation volume is 0.75 What will be the ultimate volume of deflocculated suspension
(a) 2.0 (b) 1.5 (c) 0.75 (d) 0.5
23. What will be the time required for a drug exhibiting first order rate constant of 4.6/hr to be degraded from initial concentration of 100 mg/ml to 10 mg/ml
(a) 2 hr (b) 4 hr (c) 9 hr (d) 0.5 hr
24. What will be the dose required maintaining therapeutic concentration of 20 microgram/ml for 24 hr of a drug exhibiting total clearance of 2 L/hr
(a) 96 mg (b) 480 mg (c) 960 mg (d) 48 mg
25. What will be the urine to plasma ratio of a weakly acidic drug having pK_a of 5 [urine (pH5) plasma (pH7)]
(a) 1:101 (b) 1:201 (c) 2:101 (d) 1:202
26. The Reynolds number widely used to classify flow behavior of fluids is the ratio of which one of the followings
(a) Inertial forces to gravitational forces
(b) Inertial forces to viscous forces
(c) Viscous forces to inertial forces
(d) Viscous forces to gravitational forces
27. If the distillation graph using McCabe Thiele method is parallel to X-axis, then the feed is which one of the followings
(a) Saturated liquid (b) Saturated vapor
(c) Superheated liquid (d) Superheated vapor
28. What for the baffles are provided in a shell and tube heat exchanger
(a) To increase turbulence
(b) To decrease turbulence
(c) To prevent corrosion
(d) To increase shell side passes
29. SOS means which one of the followings
(a) Take occasionally (b) Take immediately
(c) Take when necessary (d) Take as directed
30. Which statement is FALSE for Association Colloids
(a) They are also called amphiphiles
(b) They contain aggregated molecules
(c) They show partial solvation
(d) They are also called micelles
31. Which of the followings is NOT a reciprocating pump
(a) Plunger pump (b) Diaphragm pump
(c) Gear pump (d) Piston pump
32. Which is NOT applicable to protein binding
(a) Klotz reciprocal plot (b) Sandberg modified equation
(c) Blanchard equation (d) Detli plot
33. Statement [P] Soft gelatin capsules contain 12-15% moisture
Statement [Q] Hard gelatin capsule shells contain 6-10% moisture
Choose the correct statement
(a) Both of the above statements [P] & [Q] are true
(b) Both of the above statements [F] & [Q] are false
(c) Statement [P] is true and [Q] is false
(d) Statement [P] is false and [Q] is true
34. According to USP the speed regulating device of the dissolution apparatus should be capable of maintaining the speed within limits of what % of the selected speed
(a) 1% (b) 2% (c) 4% (d) 5%
35. A drug whose solubility is 1 g/L in water, when given orally at a dose of 500 mg absorbed up to 95% of the administered dose. The drug belongs to which class according to the BCS classification
(a) Class I (b) Class II (c) Class III (d) Class IV
36. Which statement is NOT true for steam distillation
(a) It is also called differential distillation
(b) It can be used for separation of immiscible liquids
(c) It can be applied for volatile substances
(d) It can be used for separation of miscible liquids
37. The area of clear opening of any two successive sieves according to Tyler standard in the ratio of
(a) 1 : 4 (b) 1 : 6 (c) 1 : 2 (d) 1 : 3

38. **What is Primogel**
 (a) Substituted HPMC for direct compression
 (b) Modified microcrystalline cellulose for direct compression
 (c) Hydro gelling polymer for gel formation
 (d) Modified starch for disintegration
39. **A tooth paste contains stannous fluoride and calcium pyrophosphate along with other formulation constituents. Choose the correct statement out of the followings**
 (a) Stannous fluoride in an anticaries agent while calcium pyrophosphate is a dentifrice
 (b) Stannous fluoride is a dentifrice while calcium pyrophosphate is a desensitizing agent
 (c) Stannous fluoride is a desensitizing agent while calcium pyrophosphate is an anticaries agent
 (d) Both are dentifrices while calcium pyrophosphate is additionally a desensitizing agent
40. **Which microbe is used for validation of sterilization by fibration process**
 (a) Bacillus stearothermophilus
 (b) Pseudomonas diminuta
 (c) Bacillus Subtilis
 (d) Pseudomonas aeruginosa
41. **Non-linear pharmacokinetics can be expected due to [P] Enzyme induction [Q] Active secretion. Choose the correct answer**
 (a) Both [P] and [Q] are true
 (b) [P] is true [Q] is false
 (c) [Q] is true [P] is false
 (d) Both [P] and [Q] are false
42. **Which wavelength of the UV light provides maximum germicidal action**
 (a) 253.7 nm (b) 275.5 nm
 (c) 283.5 nm (d) 240.0 nm
43. **Which water is used for hand washing in a change room of pharmaceutical manufacturing plant**
 (a) Potable water (b) Purified water
 (c) Disinfectant water (d) Soap water
44. **Which one of the following drying methods is commonly used in Pharma industry for drying of soft shell capsules**
 (a) Truck drying (b) Fluid bed drying
 (c) Vacuum drying (d) Microwave drying
45. **Which one of the following does NOT afford a macromolecular inclusion compound**
 (a) Zeolites (b) Dextrins
 (c) Silica gels (d) Cyclodextrin
46. **If C is the concentration of dissolved drug and C_s is the saturation concentration. In which case the sink conditions are said to be maintained**
 (a) $C < 20\%$ of C_s (b) $C > 20\%$ of C_s
 (c) $C < 10\%$ of C_s (d) $C > 10\%$ of C_s
47. **Which condition does NOT apply as per Indian law while conducting single dose bioavailability study of an immediate release product**
 (a) Sampling period should be at least three $t_{1/2}$
 (b) Sampling should represent pre exposure peak exposure and post-exposure phases
 (c) There should be at least four sampling points during elimination phase
 (d) Sampling should be continued till measured AUC is at least equal to 80% of AUC
48. **Upon standing sometimes gel system shrinks a bit and little liquid is pressed out. What is this phenomenon known as**
 (a) Oozing (b) Syneresis
 (c) Shrinking (d) Desolvation
49. **Which of the following parameters from plasma concentration time profile study gives indication of the rate of drug absorption**
 (a) C_{max} (b) t_{max} (c) AUC (d) $t_{1/2}$

Pharmacology

50. **An iron compound used as heamatinic agent must meet two requirements i.e it should be biologically available and be non-irritating. Which one of the following compounds meet the above two requirements most closely**
 (a) Ferric chloride
 (b) Ferric ammonium sulphate
 (c) Ferric ammonium citrate
 (d) Ferrous thioglycolate
51. **Iodine -131 as sodium iodide solution is used as a radiopharmaceutical for diagnostic and therapeutic purposes. Its usage is dependent on the release of the following emissions**
 [P] Alpha particles [Q] Positrons
 [R] Beta emission [S] Gamma radiation
Choose the correct combination of statements
 (a) [R] & [S] (b) [Q] & [S]
 (c) [P] & [R] (d) [P] & [S]
52. **Hydrogen peroxide solution (20 volumes) is used topically as a mild antiseptic. It is mainly used for cleaning of wounds which could be due to some of the following actions of hydrogen peroxide**
 [P] Astringent action
 [Q] Nascent hydrogen releasing action
 [R] Oxidizing action
 [S] Mechanical cleansing action
Choose the correct statements for the use of hydrogen peroxide as cleaning agent wounds
 (a) [P] & [R] (b) [P] & [Q]
 (c) [R] & [Q] (d) [R] & [S]
53. **Magnesium trisilicate is considered to be a better antacid than aluminum hydroxide due to its following additional properties**
 [P] It has a fixed chemical composition
 [Q] It forms colloidal silicone dioxide
 [R] Magnesium ions overcome constipation
 [S] Magnesium ions cause higher inhibition of pepsin than aluminum ions

Choose the correct combination of statements

- (a) [Q] & [S] (b) [R] & [S]
(c) [P] & [Q] (d) [Q] & [R]

54. Which of the following routes of administration of drugs is associated with Phlebitis
(a) Subcutaneous (b) Intravenous
(c) Intraspinal (d) Intradural
55. Which of the following pairs has high binding affinity for 5 alpha reductase
(a) Letrozol and androstenedione
(b) Finasteride and testolactone
(c) Finasteride and 5-DHT
(d) Finasteride and testosterone
56. Which of the following skeletal muscle relaxants acts directly on the contractile mechanism of the muscle fibers
(a) Pancuronium (b) Baclofen
(c) Dantrolene (d) Chlorzoxazone
57. Which is the molecular target for the vinca alkaloids as anticancer agents
(a) Tyrosine kinase (b) DNA
(c) Ribosomes (d) Tubulin
58. Choose the correct pair of the neurodegenerative disorders from those given below
(a) Parkinson's disease and Alzheimer's disease
(b) Schizophrenia and Mania
(c) Alzheimer's disease and Schizophrenia
(d) Parkinson's disease and Autism
59. A 64 year old woman with a history of Type II diabetes is diagnosed with heart failure. Which of the followings would be a Four choice in controlling her diabetes
(a) Metformin (b) Pioglitazone
(c) Glipizide (d) Exenatide
60. Mifepristone and Gemeprost combination is used for medical termination of pregnancy The action is caused due to which of the following mechanisms
(a) Mifepristone is an antiestrogen while Gemeprost is a prostaglandin E receptor agonist
(b) Mifepristone is an antiprogesterin while Gemeprost is a prostaglandin E receptor agonist
(c) Mifepristone is an antiandrogen while Gemeprost is a prostaglandin E receptor agonist
(d) Mifepristone is an antiprogesterin while Gemeprost is a prostaglandin E receptor antagonist
61. Which one of the followings is a beta lactamase inhibitor
(a) Penicillanic acid (b) Emmonic acid
(c) Cephalosporanic acid (d) Clavulanic acid
62. All of the followings are indications for use of ACE inhibitors EXCEPT for one, Identify that
(a) Hypertension
(b) Myocardial infarction
(c) Left ventricular dysfunction
(d) Pheochromocytoma
63. Neural tube defects may occur by which one of the following anti-seizure drugs
(a) Ethosuximide (b) Vigabatrin
(c) Valproic acid (d) Primidone
64. Inhibition/induction of which of the following Cytochrome P450 enzyme system is most likely to be involved in important drug-drug interactions
(a) CYP3A4 (b) CYP2D6
(c) CYP2C9 (d) CYP1A2
65. Which of the following mechanisms is NOT related to platelet aggregation inhibitory action
(a) ADP receptor antagonism
(b) Glycoprotein IIb/IIIa receptor antagonism
(c) Phosphodiesterase inhibition
(d) Prostacyclin inhibition
66. Choose the correct statement about the given four diseases
[P] Cardiomyopathy [Q] Rheumatoid arthritis
[R] Myasthenia gravis [S] Ulcerative colitis
(a) [Q] & [S] are autoimmune disorders
(b) [P] & [Q] are autoimmune disorders
(c) [P] & [R] are not autoimmune disorders
(d) [R] & [S] are not autoimmune disorders
67. Which of the following species is being inactivated by the enzyme Dipeptidyl Peptidase-4
(a) Oxytocin (b) Vasopressin
(c) Incretins (d) Glucagon
68. Patients taking isosorbide mononitrate or nitroglycerine should be advised not to take Sildenafil. This drug-drug interaction cases which of the following actions
(a) Respiratory failure
(b) Severe hypotension
(c) Prolongation of QT interval
(d) Myocardial ischemia
69. Which of the following drugs does NOT induce mydriasis
(a) Atropine (b) Ephedrine
(c) Phentolamine (d) Cocaine
70. Which of the following statements is TRUE for angiotensin II
(a) Causes myocyte hypertrophy
(b) Decreases the action of sympathetic nervous system
(c) Increases force of myocardial contraction
(d) Decreases the synthesis and release of aldosterone
71. Which of the following beta blockers has been shown clinically to reduce mortality Inpatients of symptomatic heart failure
(a) Atenolol (b) Carvedilol (c) Propranolol (d) Esmolol
72. All of the given four drugs cause vasodilation Choose the correct statement about them
[P] Bradykinin [Q] Minoxidil
[R] Acetylcholine [S] Hydralazine
(a) [P] & [Q] cause release of nitric oxide
(b) [Q] & [R] do not cause release of nitric oxide
(c) [R] & [S] cause release of nitric oxide
(d) [P] & [S] do not cause release of nitric oxide
73. Rhabdomyolysis is the side effect associated with which of the following classes of drugs
(a) ACE inhibitors
(b) Statins
(c) Calcium channel blockers
(d) Sodium channel blockers

74. **Blood level monitoring of HbA1c is important in which of the given diseased states**
 (a) Hypercholesterolemia
 (b) Diabetes mellitus
 (c) Myocardial infarction
 (d) Congestive heart failure
75. **Most of the emergency contraceptives have which one of the following active ingredients**
 (a) Estradiol (b) Norethindrone
 (c) Misoprostol (d) Levonorgestrel
76. **Which of the following antibiotics produces concentration dependent bactericidal action and also possesses post-antibiotic effect**
 (a) Ceftazidime (b) Azithromycin
 (c) Amikacin (d) Piperacillin
77. **Antiretroviral Raltegravir is unique, because of which of its following actions**
 (a) Integrase inhibition
 (b) CCR5 Co-receptor antagonism
 (c) Fusion inhibition
 (d) Reverse transcriptase inhibition
78. **What is chemotaxis**
 (a) Toxicity of chemicals
 (b) Taxonomy of chemicals
 (c) Inhibition of Inflammation
 (d) Movement of leucocytes in inflammation
79. **Which one of the following is NOT an example of G-protein coupled receptor**
 (a) Muscarinic cholinergic receptor
 (b) Alpha adrenoceptor
 (c) Nicotinic cholinergic receptor
 (d) Beta adrenoceptor
80. **Which of the following is used in the treatment of rheumatoid arthritis is NOT a biologic response modifier**
 (a) Anakinra (b) Leflunomide
 (c) Etanercept (d) Infliximab
81. **Which of the following statements is FALSE for artemisinin**
 (a) It is a sesquiterpene lactone endoperoxide
 (b) It is a drug of choice in prophylaxis of malaria
 (c) It does not cure relapsing malaria
 (d) It is useful in treatment of cerebral falciparum malaria
82. **Which of the following is a noncompetitive inhibitor of the enzyme reverse transcriptase in HIV**
 (a) Lamivudine (b) Nevirapine
 (c) Abacavir (d) Tenofovir
83. **Which of the following is the most effective monotherapy for raising HDL cholesterol**
 (a) Statins (b) Niacin
 (c) Ezetimibe (d) ω -3-Fatty acids
- [Q] Is glycosidic in nature
 [R] Can be hydrolysed to an alkaloid
 [S] Always contains endocyclic nitrogen in its molecule
Choose the correct combination of statements
 (a) [P] & [R] (b) [Q] & [S]
 (c) [Q] & [R] (d) [P] & [Q]
85. **Which of the following statements are true for ginseng root**
 [P] It is among the most traded plant material of Brazil
 [Q] It is obtained from Panax ginseng and Panax quinquefolium
 [R] It is obtained from young plants of six months to one year age
 [S] It contains derivatives of protopanaxadiol
Choose the correct combination of statements
 (a) [P] & [Q] (b) [R] & [S]
 (c) [Q] & [R] (d) [Q] & [S]
86. **Which of the following drugs is a triterpenoid containing root**
 (a) Valerian (b) Brahmi (c) Satavari (d) Adulsa
87. **Which of the following alkaloids is derived from tyrosine**
 (a) Quinine (b) Morphine (c) Atropine (d) Ephedrine
88. **The following options carry the name of the plant, part used and its family. Find a wrong combination**
 (a) Aegle marmelos, fruit & Rutaceae
 (b) Conium maculatum, fruit & Umbelliferae
 (c) Glycyrrhiza glabra, root and stolon & Leguminosae
 (d) Strophanthus gratus, seed & Scrophulariaceae
89. **Anomocytic stomata trichomes with collapsed cell and absence of calcium oxalate crystals are some of the microscopic features of which plant**
 (a) Digitalis (b) Hyoscyamus
 (c) Mentha (d) Senna
90. **Each of the following options lists the name of the drug its class pharmacological Action and plant source. Choose an option showing a wrong combination**
 (a) Asafoetida oleo-gum-resin, anti-flatulence, Ferula foetida
 (b) Benzoin, balsam, antiseptic Styrax benzoin
 (c) Myrrh gum-resin antiseptic Commiphora wightii
 (d) Papain enzyme proteolytic Carica papaya

Pharmacognosy

84. **A glycoalkaloid**
 [P] Contains sulphur in addition to nitrogen in its molecule

Answer Key

1 - a	2 - b	3 - b	4 - c	5 - d	6 - d	7 - b	8 - b	9 - b	10 - d
11 - a	12 - b	13 - a	14 - b	15 - d	16 - a	17 - c	18 - a	19 - c	20 - b
21 - a	22 - d	23 - d	24 - c	25 - c	26 - b	27 - a	28 - a	29 - c	30 - d
31 - c	32 - d	33 - b	34 - c	35 - a	36 - a	37 - c	38 - d	39 - a	40 - b
41 - a	42 - a	43 - b	44 - c	45 - d	46 - c	47 - d	48 - b	49 - c	50 - c
51 - a	52 - d	53 - d	54 - b	55 - d	56 - c	57 - d	58 - a	59 - b	60 - b
61 - d	62 - d	63 - c	64 - a	65 - d	66 - b	67 - c	68 - b	69 - c	70 - a
71 - b	72 - c	73 - b	74 - b	75 - d	76 - c	77 - a	78 - d	79 - c	80 - b
81 - b	82 - b	83 - b	84 - b	85 - d	86 - c	87 - b	88 - d	89 - a	90 - c
91 - b	92 - d	93 - c	94 - a	95 - a	96 - a	97 - b	98 - b	99 - c	100 - d
101 - b	102 - b	103 - c	104 - a	105 - b	106 - a	107 - a	108 - a	109 - a	110 - a
111 - d	112 - a	113 - b	114 - c	115 - b	116 - b	117 - a	118 - b	119 - a	120 - b
121 - a	122 - b	123 - a	124 - a	125 - d	126 - d	127 - d	128 - c	129 - a	130 - d
131 - d	132 - b	133 - c	134 - a	135 - d	136 - d	137 - d	138 - d	139 - c	140 - b
141 - d	142 - a	143 - a	144 - c	145 - b	146 - d	147 - b	148 - c	149 - c	150 - c

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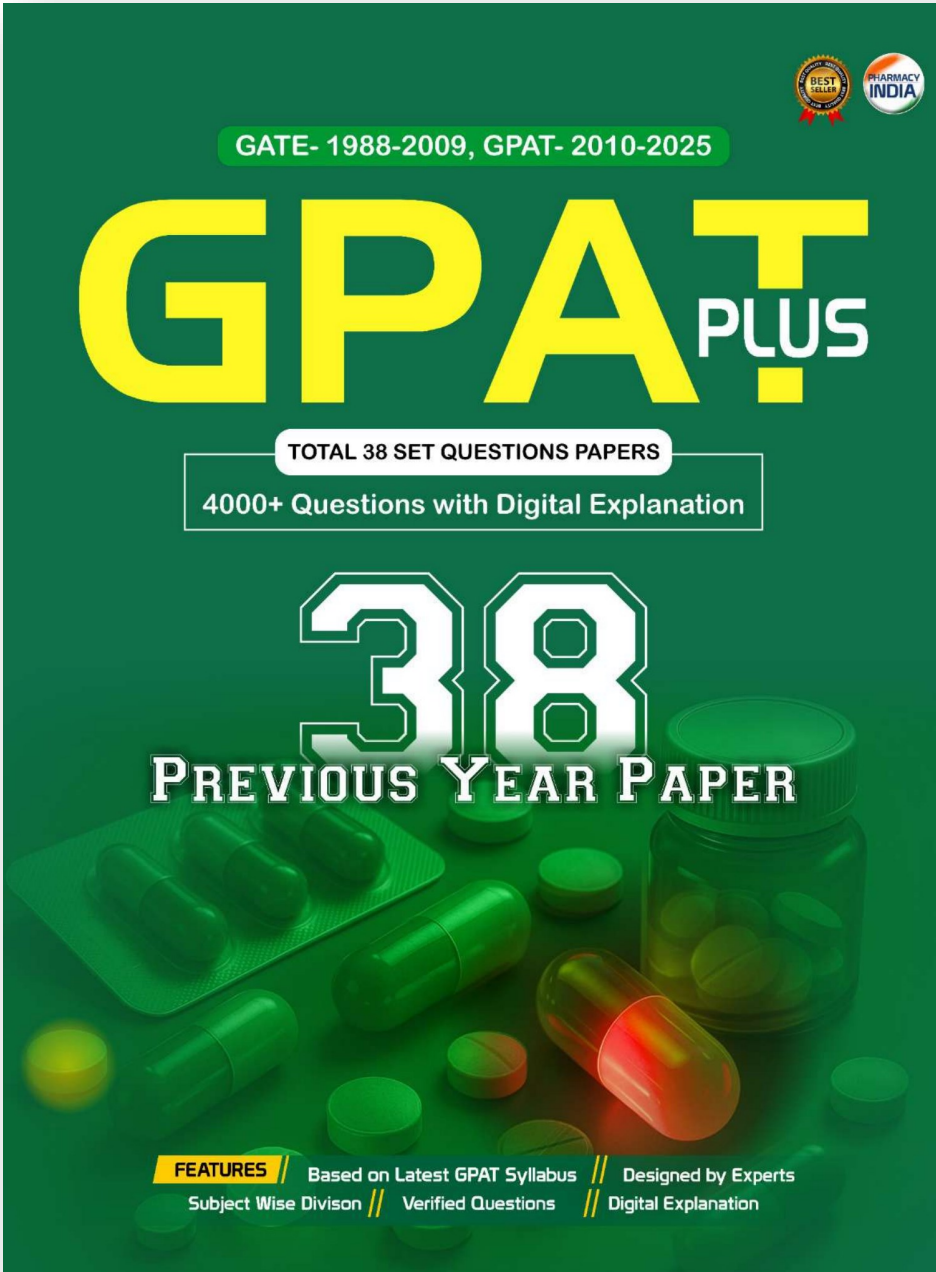


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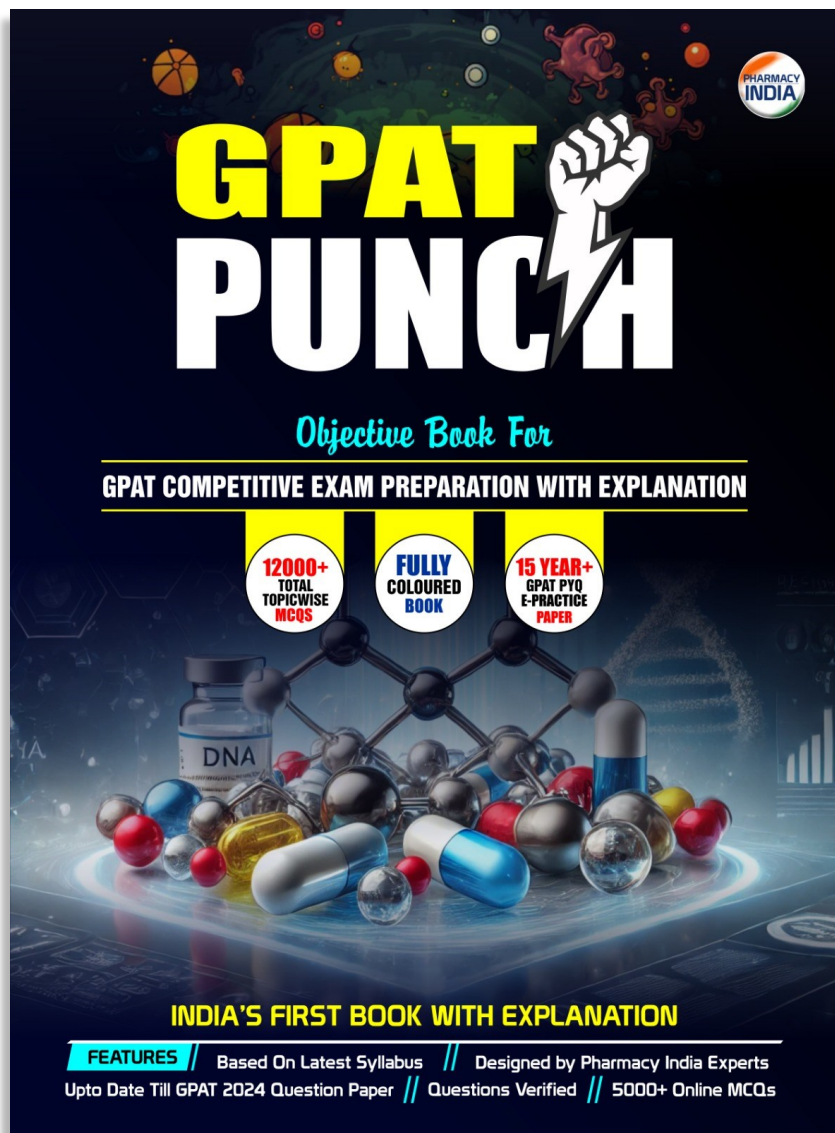
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