

GPAT-2023

SHIFT-I

Pharmaceutics

- Which of the following terms is used to describe the "Partial or complete separation of the top or body crowns of a tablet from the main body of the tablet"?
(a) Lamination (b) Capping
(c) Picking (d) Mottling
- The law of relative lowering of vapour pressure was given by
(a) Raoult (b) Ostwald
(c) Henry (d) Van't Hoff
- Dipole-dipole weak interactions are also called as
(a) London forces (b) Debye interactions
(c) Electrovalent forces (d) Keesom forces
- Invert sugar is a product obtained by the hydrolysis of
(a) Maltose (b) Sucrose (c) Lactose (d) Dextrin
- The time taken at a fixed temperature or the radiation dose required to achieve a 90% reduction in viable bacterial cells is called
(a) F value (b) Z value (c) D value (d) T value
- In pharmacokinetic models, the term "Compartment" means
(a) Blood (b) Individual organ
(c) Extracellular fluid (d) Hypothetical pool of tissue
- The most efficient heat exchange between the particles and flowing air occurs in the
(a) Tray dryer (b) Vacuum Dryer
(c) Fluidized bed dryer (d) Rotary dryer
- The Drug Price Control Order (DPCO) is an order issued by the Government under the _____ which enables it to fix the prices of some essential bulk and their formulations
(a) Essential Commodities Act
(b) Essential Commodities Amendment
(c) Essential Commodities Accessories
(d) Ethical Commodities Act
- According to IP and BP, very fine powder is one in which
(a) All particles pass through 120# sieve
(b) 90% particles pass through 350# sieve
(c) All particles pass through 350# sieve
(d) 90% particles are of size $< 10 \mu\text{m}$
- Which of the following pharmaceutical solvent has the highest dielectric constant, at 25 degree C
(a) Glycerin (b) Ethanol (c) Acetone (d) Phenol
- Kozeny Carman equation is used to determine the
(a) Surface area of the powder (b) Viscosity of a liquid
(c) Surface tension of a liquid (d) Density of a liquid
- Which of the following emulsifiers has the highest HLB value
(a) Span 80 (b) Acacia
(c) Tween 80 (d) Sodium lauryl sulfate
- Which of the following substances are not used as humectants in emulsions?
(a) Propylene glycol (b) Sorbitol
(c) Tocopherol (d) Glycerol
- Under which of the following conditions in-vitro-in-vivo correlation for a drug fails
(a) When the drug is highly soluble
(b) When the drug's absorption takes place by a complex process
(c) When the dissolution medium is adequately simulated
(d) When the drug is highly permeable but poorly soluble
- A crystalline powder that contains water of crystallization or hydration; this water can be liberated either during manipulations or on exposure to a low-humidity environment then the powder will become sticky and pasty, or it may even liquefy. Such a powder is called
(a) Eutectic (b) Hygroscopic
(c) Deliquescent (d) Efflorescent
- The formula to calculate liquid pressure is
(a) $P = mgh$ (b) $P = wgh$ (c) $P = \rho gh$ (d) $P = Fgh$
- Out of the following solvents which one is not a polar solvent
(a) Ethanol (b) Methanol (c) Hexane (d) Water
- Which of the following molecular properties can be determined by Thermogravimetric Analysis
(a) Solubility (b) Hygroscopicity
(c) Colour stability (d) Hydrolysis
- Which of the following levels of IVIVC is represented by "the relationship between one dissolution time point (e.g. $t_{50\%}$) and one mean pharmacokinetic parameter, such as AUC, T_{\max} or C_{\max} "
(a) Level A (b) Level B
(c) Level C (d) Level D
- Which of the following USP Glass Types is NOT SUITABLE for parenteral packaging
(a) Type I (b) Type II (c) Type III (d) Type IV
- The difference in velocity between two planes of liquids separated/infinitesimal distance is called
(a) Rate of shear (b) Rate of flow
(c) Rate of force (d) Shearing stress
- The required amount of adjusting substance required to make a hypotonic solution, isotonic is given by the (Where, W = Adjusting substance, a = Freezing point depression of unadjusted solution and b = Freezing point depression of water)

- (a) $W = a - 0.52/b$ (b) $W = 0.52 - a/b$
 (c) $W = 0.52 - b/a$ (d) $W = b - 0.52/a$

23. Clear, sweetened hydroalcoholic solutions intended for oral use, usually flavored to enhance their palatability are called

- (a) Aromatic waters (b) Elixirs
 (c) Syrups (d) Tinctures

24. Which of the following Climatic Zones (As per WHO Criteria) refers to "Hot and Humid climate"

- (a) Zone I (b) Zone II (c) Zone III (d) Zone IV

25. Which of the following is the common chemical name for Propellant 11

- (a) Trichloromonofluoromethane
 (b) Dichlorodifluoromethane
 (c) Dichlorotetrafluoroethane
 (d) Chloropentafluoroethane

26. A component of film-coating solution to make film more pliable, enhance spread over tablets, beads and granules is called

- (a) Adsorbent (b) Humectant
 (c) Stiffening agent (d) Plasticizer

27. Match the following List I with List II with respect to formulation of disperse system

LIST I – FORMULATION INGREDIENT

1. Salts of d-glucuronic acid
2. Polypeptides and amino acids
3. Surfactants, both ionic and nonionic
4. Magnesium aluminum silicate
5. Structured vehicles

LIST II – ACTIVITY / PROPERTY

- [P] Are pseudoplastic and plastic in nature
 [Q] Form a multimolecular film around the dispersed droplets of oil in an o/w emulsion
 [R] Emulsifier belonging to the class of solid particles; form W/O emulsion
 [S] Emulsifier belonging to the class of solid particles and form O/W emulsion
 [T] Have been used to bring about flocculation of suspended particles

Choose the correct answer from the options given below:

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

28. What is the percentage of alcohol in a mixture obtained by mixing 5 L of 25%, 3 L of 40% and 2 L of 15% alcohol?

- (a) 27.5% v/v (b) 30.5% v/v
 (c) 25.5% v/v (d) 26.5% v/v

29. For disguising the astringent and metallic taste of iron salts in children's mixture, the following flavoring agent is used

- (a) Orange syrup and compound orange syrup
 (b) Lemon syrup
 (c) Liquorice liquid extract
 (d) Aromatic water

30. A tablet excipient, whose function is to ensure that tablet formulation and ejection can occur with low friction between the solid and the die wall, is called

- (a) Gildant (b) Lubricant
 (c) Anti-adhesive (d) Binder

31. Clathrates crystallize in the form of

- (a) Channel type structure (b) Tetragonal type structure
 (c) Cubic type lattice (d) Cage like lattice

32. Which of the following ointment bases is an "Absorption base"?

- (a) Yellow ointment USP
 (b) Hydrophilic petrolatum USP
 (c) Hydrophilic ointment USP
 (d) PEG ointment NF

33. Which of the following surfactants is an Anionic surfactant?

- (a) Lecithin (b) Sorbitan esters
 (c) Benzalkonium chloride (d) Soaps

34. Which of the following formulations are "Pharmaceutically equivalent"?

INGREDIENT		FUNCTION		TABLET A	TABLET B	TABLET C	TABLET D
P	Acetaminophen	I	Drug	300mg	---	300mg	300mg
Q	Aspirin	II	Drug	---	300mg	---	---
R	Lactose	III	Filler	200mg	100mg	---	100mg
S	Avicel	IV	Filler	---	---	100mg	---
	Starch		Disintegrant	100mg	50mg	---	50mg
	Avicel		Disintegrant	---	---	50mg	---
	Mag stearate		Lubricant	2mg	2mg	2mg	2mg
	Gelatin		Binder	10mg	10mg	10mg	10mg

Choose the correct answer from the options given below

- (a) P and Q (b) Q and R
 (c) P and R (d) Q and S

35. What is the approximate amount of powder (in mg) that can be filled in empty gelatin capsules of size 00

- (a) 1040 mg (b) 650 mg (c) 325 mg (d) 162 mg

36. The interfacial forces are related to the contact angle by

- (a) Nernst Equation (b) Stoke's Equation
 (c) Young's Equation (d) Laplace Equation

37. In the Langmuir isotherm, following statements are true EXCEPT one

- (a) The layer of the gas adsorbed on the solid adsorbent is one molecule thick
 (b) Adsorbed layer is uniform all over adsorbent
 (c) No desorption takes place when gas strikes solid surface
 (d) No interaction between the adjacent adsorbed molecules takes place

38. In absence of instruction by the prescriber, unless otherwise directed, the dose given for the mixture preparation should be stated on the label as

- (a) One five ml spoonful to be taken three times a day in water
 (b) Two five ml spoonful to be taken three times a day in water
 (c) Two five ml spoonful to be taken two times a day in water
 (d) One five ml spoonful to be taken two times a day in water

39. Suspensions containing a high percentage (about 50% or greater) of small deflocculated particles would show which of the following flow properties

- (a) Plastic flow (b) Dilatant flow
(c) Newtonian flow (d) Pseudoplastic flow

40. Drugs covered under this schedule are not permitted for repacking license. Identify the correct schedule

- (a) Schedule H (b) Schedule G
(c) Schedule O (d) Schedule C and C₁

41. Requirements of factory premises for the manufacture of cosmetics are mentioned in the Drugs and Cosmetics Rules, 1945 under

- (a) Schedule M (b) Schedule M-1
(c) Schedule M-2 (d) Schedule M-3

42. Match List I with List II

LIST I SCHEDULE			LIST II COVER THE
1.	Schedule Y	[P]	Shelf of drugs
2.	Schedule FF	[Q]	Requirements for clinical trials
3.	Schedule O	[R]	Disinfectant liquids
4.	Schedule P	[S]	Ophthalmic ointments

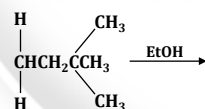
Choose the correct answer from the options given below

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

Pharmaceutical Chemistry

43. Choose the CORRECT and the major product formed in the above-given reaction from choices listed below:

- (a) 2-Pentene
(b) 2-Methyl-2-butene
(c) 1-Pentene
(d) 1-Methyl-2-butene



44. The following are the processes occurring during flame atomization in atomic absorption spectrometry [P] Volatilization [Q] Ionization [R] Nebulization [S] Arrange [T] Dissociation Desolvation the processes in sequential order and choose the correct answer from below

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

45. A mixture of p-anisaldehyde and formaldehyde in the presence of concentrated sodium hydroxide results in

- (a) p-Methoxy sodium benzoate
(b) Sodium-p-methoxy benzene
(c) P-Methoxy benzyl alcohol
(d) p-Methoxy benzoyl alcohol

46. Which one of the following compound is a precursor for the biosynthesis of cholesterol

- (a) Progesterone (b) Lanosterol
(c) Cholic acid (d) Coprostanol

47. Which one among the following drugs has the IUPAC name a, a, a, a tetramethyl 5-(1H-1,2,4-triazole-1-yl-methyl)-1,3-benzenediacetonitrile?

- (a) Letrozole (b) Anastrozole
(c) Exemestane (d) Aminoglutethimide

48. The reaction between naphthalene and chromium trioxide in the presence of glacial acetic yields?

- (a) Naphthalene-1,4-dione
(b) 4-Hydroxynaphthalen-1(4H)-one
(c) Naphthalene-1,2-dione
(d) 1-Hydroxynaphthalen-2(1H)-one

49. Platinum electrode surrounded by an outer tube, in which hydrogen passes entering through side inlet and escaping at the bottom through the test solution is called as

- (a) Silver electrode (b) Calomel electrode
(c) Standard hydrogen electrode (d) Indicator electrode

50. Which of the following gives correct rank order from fastest to slowest of the relative rates in reaction of methyl bromide, tert-butyl bromide, isopropyl bromide and ethyl bromide

- (a) Methyl bromide > Ethyl Bromide > Isopropyl bromide > tert-Butyl bromide
(b) Tert-Butyl bromide > Isopropyl bromide > Ethyl Bromide > Methyl bromide
(c) Ethyl bromide > Methyl Bromide > Isopropyl bromide > tert-Butyl bromide
(d) Methyl bromide > Ethyl Bromide > tert-Butyl bromide > Isopropyl bromide

51. Select the correct set of anticancer drugs that belong to "Pyrimidine and related compounds"

- (a) 5-Fluorouracil, Tegafur, Decitabine, 5-Azacytidine
(b) 5-Fluorouracil, Tegafur, Decitabine, Clofarabine
(c) Tegafur, Decitabine, 5-Azacytidine, Clofarabine
(d) Tegafur, Decitabine, 5-Azacytidine, Pentostatin

52. E₂ elimination converts neomenthyl chloride into a mixture of the following compounds

- (a) 3-menthene (75%) and 2-menthene (25%)
(b) 4-menthene (75%) and 2-menthene (25%)
(c) 3-menthene (25%) and 5-menthene (75%)
(d) 1-menthene (50%) and 3-menthene (50%)

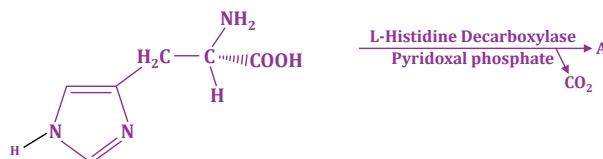
53. Ethyl-2 (p-chlorophenoxy)-2-methyl propionate is IUPAC name of

- (a) Fenofibrate (b) Colestipol
(c) Clofibrate (d) Colesevelam

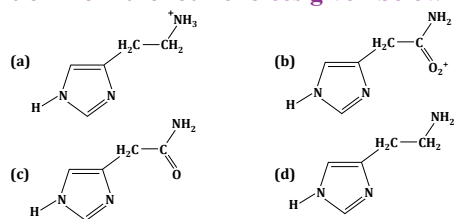
54. Identify the vibrational modes shown by sulfur dioxide molecule in IR spectroscopy

- (a) Symmetric stretching and asymmetric stretching
(b) Symmetric stretching and scissoring
(c) Asymmetric stretching and scissoring
(d) Symmetric stretching, asymmetric stretching and scissoring

55.



Select the correct product A of the above-given reaction from the four choices given below



56. The perfect orientation for a Diels-Alder reaction between the reactants is

- Diene should be S-cis and reaction endo facing
- Diene should be S-cis and reaction exo facing
- Diene should be S-trans and reaction endo facing
- Diene should be S-trans and reaction exo facing

57. How would you prepare 2000 mL of 0.15 M NaOH aqueous solution

- Dissolve 12 g of NaOH in distilled water and dilute to 2000 mL
- Dissolve 15 g of NaOH in distilled water and dilute to 2000 mL
- Dissolve 10 g of NaOH in distilled water and dilute to 2000 mL
- Dissolve 7.5 g of NaOH in distilled water and dilute to 2000 mL

58. Identify what is not a continuum source of radiation for use in absorption and fluorescence spectrophotometers

- Argon arc lamp
- Hollow-cathode lamp
- Deuterium lamp
- Xenon arc lamp

59. The molecular formula of purine is R

- $C_5H_4N_4$
- $C_6H_5N_3$
- $C_7H_6N_2$
- $C_4H_3N_5$

60. Given below are two statements, one is labelled as Assertion and the other is labelled as Reason
Assertion (A) The disadvantage of atomic absorption spectroscopy is the need for each element to be analysed.

Reason (R) As atomic absorption spectrophotometer uses different halocathode lamp for each element, it is very specific for an individual element under test
 In light of the above statements,

Choose the CORRECT answer from the options given below

- Both A and R are true and R is the correct explanation of A
- Both A and R are true but R is NOT the correct explanation of A
- A is true but R is false
- A is false but R is true

61. In context to voltammetry, which of the following statement is FALSE?

- Technique can be used to analyse organic compounds containing carbonyl groups
- Organic solvents cannot be used in voltammetry

- Immuno sensors are available for excitation of solution in cyclic voltammetry
- Triangular waveform is used for decreasing dielectric constant

62. Choose the CORRECT order of decreasing dielectric constant:

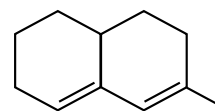
- Water > Formamide > Methanol > Acetone
- Water > Methanol > Acetone > Formamide
- Formamide > Acetone > Methanol > Water
- Formamide > Water > Methanol > Acetone

63. How many optical isomers are possible for lactic acid?

- 2
- 4
- 6
- 8

64. Predict the wavelength of absorption band in the UV spectrum of the below shown structure:

- 252 nm
- 248 nm
- 244 nm
- 240 nm



65. Electrophilic substitution reaction of pyridine, when carried out in the presence of KNO_3 and conc. H_2SO_4 at $300^\circ C$, leads to the formation of:

- 4-Nitropyridine
- 3-Nitropyridine
- 2-Nitropyridine
- N-nitro pyridinium salt

66. A reagent may attach itself to a conjugated diene to the carbons at the two ends of the conjugated system. Identify the reaction involved from the following:

- 1,2-addition
- 1,4-addition
- 1,3-addition
- 2,4-addition

67. Following groups exert any one of the effects on electrophilic aromatic substitution
 $-OC_2H_5$, $-NHCOCH_3$, $-OCH_3$
 Identify whether all there are:

- Weakly activating
- Deactivating
- Moderately activating
- Strongly activating

68. The CORRECT rank order of orientation of sulfonation in toluene is:

- 4-methylbenzenesulfonic acid > 2-methylbenzenesulfonic acid > 3-methylbenzenesulfonic acid
- 2-methylbenzenesulfonic acid > 3-methylbenzenesulfonic acid > 4-methylbenzenesulfonic acid
- 3-methylbenzenesulfonic acid > 4-methylbenzenesulfonic acid > 2-methylbenzenesulfonic acid
- 3-methylbenzenesulfonic acid > 2-methylbenzenesulfonic acid > 4-methylbenzenesulfonic acid

69. Lucas test is very rapid with:

- 1° alcohol
- 2° alcohol
- 3° alcohol
- Phenol

70. As the solution of a strong electrolyte is diluted, the following phenomenon is observed:

- The specific conductance decreases and equivalent conductance increases
- The specific conductance increases and equivalent conductance decreases
- Both specific conductance and equivalent conductance increase
- Both specific conductance and equivalent conductance decrease

71. The molecule having zero dipole moment is
(a) BF_3 (b) HF (c) NH_3 (d) CH_3Cl

Pharmacology

72. Following is an example of atypical anti-psychotic
(a) Haloperidol (b) Clozapine
(c) Thioridazine (d) Fluphenazine
73. Following is NOT an example of Carbapenem
(a) Thienamycin (b) Imipenem 70
(c) Piperacillin (d) Meropenem
74. Which of the following Urinary Tract Anti-Infective agents requires an acidic pH of urine for optimum action
(a) Gentamicin (b) Erythromycin
(c) Carbenicillin (d) Streptomycin
75. *Which of the following drugs has an apparent volume of distribution approximately 6500 L
[DROPPED QUESTION]
(a) Amoxicillin (b) Ibuprofen
(c) Chloroquine (d) Diazepam
76. Match the following concept in List I with parameters in List II

S. No.	Concept (List I)	Parameter Code (List II)	Explanation
1	Volume of distribution	S	Ratio of body drug content to plasma concentration
2	Evans blue	Q	Binds to Human serum albumin / Measure volume of plasma
3	3.5–5%	R	Volume of blood
4	Metallothionein	S	Ratio of body drug content to plasma concentration
		T	Protein present in kidney to bind metal

Choose the CORRECT answer from the options given below

- (a) 1-[P], 2-[Q], 3-[R], 4-[S]
(b) 1-[Q], 2-[P], 3-[R], 4-[S]
(c) 1-[S], 2-[P], 3-[Q], 4-[T]
(d) 1-[P], 2-[R], 3-[Q], 4-[S]
77. Trastuzumab is a/an
(a) EGFR/HER, inhibitor
(b) Angiogenesis inhibitor
(c) EGF receptor (HER,) inhibitor
(d) BCR-ABL tyrosine kinase inhibitor
78. When is a New Drug Application (NDA) made
(a) A drug meant to be distributed among the orphans who cannot afford the cost of the drug
(b) A drug for a disease which is not having any other treatment options at all
(c) A drug which is useful for rare disease
(d) A drug that is available in abundance
79. Identify the drug that is NOT among the drugs recommended as first-time drug in the treatment of Partial seizures with or without generalization

- (a) Carbamazepine (b) Valproate
(c) Diazepam (d) Lamotrigine

80. Which of the following hyperlipidemic drugs act via a GPCR?
(a) Nicotinic acid (b) Fenofibrate
(c) Atorvastatin (d) Ezetimibe
81. All the following are TNF- α Inhibitors EXCEPT
(a) Etanercept (b) Infliximab
(c) Adalimumab (d) Basiliximab
82. Match the following cells of immune system List I with their functions List II

S. No.	List I Immune System	List II Functions
1	Mast cell	P Allergic reactions
2	Lymphocytes	Q Allergic reactions
3	T-cells	R Cell mediated immune reaction
4	Monocytes-Macrophages	S Antigen recognition, Phagocytosis

Choose the CORRECT answer from the options given below

- (a) 1-[P], 2-[Q], 3-[R], 4-[S]
(b) 1-[Q], 2-[P], 3-[R], 4-[S]
(c) 1-[R], 2-[P], 3-[Q], 4-[S]
(d) 1-[P], 2-[R], 3-[Q], 4-[S]
83. Which of the following drug can produce mydriasis without cycloplegia
(a) Atropine (b) Tropicamide
(c) Homatropine (d) Ephedrine
84. What do you mean by Orphan drug
(a) A drug meant to be distributed among the orphans who cannot afford the cost of the drug
(b) A drug for a disease which is not having any other treatment options at all
(c) A drug which is useful for rare disease
(d) A drug that is available in abundance
85. Normal value of HbA1c Falk in the range of Tanul
(a) 0.1% to 0.8% (b) 6.5% to 7.5%
(c) 21.5% to 24.5% (d) 51.5% to 53.5%
86. A 70 kg woman was administered 1000 mg of the drug as i.e bolus. After its uniform distribution in the body, the plasma concentration of the drug was found to be 50 mg/L. What is its volume of distribution
(a) 70L (b) 500L (c) 20L (d) 0.1L
87. A hypertensive patient receiving a drug 'Y' for managing BP was prescribed a tricyclic antidepressant. As a result, there was an abolition of the antihypertensive action of 'Y'. Which of the following drugs could be 'Y'
(a) Atenolol
(b) Captopril
(c) Clonidine
(d) Diltiazem

88. **Put the events of acute inflammation in proper sequence**
 (a) Accumulation of fluid and plasma at the affected site → intravascular activation of platelets → polymorphonuclear neutrophils → followed by healing
 (b) Polymorphonuclear neutrophils → accumulation of fluid and plasma at the affected site → intravascular activation of platelets → followed by healing
 (c) Accumulation of fluid and plasma at the affected site → followed by healing → intravascular activation of platelets → polymorphonuclear neutrophils
 (d) Intravascular activation of platelets → polymorphonuclear neutrophils → accumulation of fluid and plasma at the affected site → followed by healing
89. **Which of the following is NOT an example of an mTOR inhibitor**
 (a) Everolimus (b) Tacrolimus
 (c) Temsirolimus (d) Sirolimus
90. **Alzheimer's disease is mainly because of the neurodegeneration of the following part of the brain**
 (a) Hypothalamus (b) Midbrain
 (c) Hippocampus (d) Cerebellum
91. **Which of the following has been found to act as a male contraceptive without affecting libido and potency**
 (a) Cyproterone (b) Gossypol
 (c) Centchroman (d) Goserelin
92. **Choose the most appropriate statement for the Peptic ulcer disease caused by NSAIDs**
 (a) H₂ antagonists offer rapid healing of ulcer provided the NSAID is discontinued
 (b) H₂ antagonists offer rapid healing
 (c) Proton Pump Inhibitor is to be given only if the NSAID is discontinued
 (d) NSAIDs are strictly contraindicated with Proton Pump Inhibitors
93. **Lateral geniculate nucleus is associated with**
 (a) Vision (b) Hearing (c) Olfaction (d) Gustation
94. **Which of the following drug used in the chemotherapy of some types of leukemia satisfies the statements**
Statement I: It is effective orally
Statement II: It has near 100% oral bioavailability
In light of the above statements,
Choose the CORRECT answer from the options given below
 (a) Asparaginase (b) Doxorubicin
 (c) Mitomycin (d) Hydroxyurea
95. **Given below are two statements**
Statement I: In vasospastic angina, the imbalance occurs when the myocardial oxygen requirement increases, as during exercise, and coronary blood flow does not increase proportionately.
Statement II: In Prinz metal's angina, oxygen delivery decreases as a result of reversible coronary vasospasm in light of the above statements,
Choose the most appropriate answer from the options given below
 (a) Both Statement I and Statement II are correct
 (b) Both Statement I and Statement II are incorrect
 (c) Statement I is correct but Statement II is incorrect
 (d) Statement I is incorrect but Statement II is correct
96. **In ECG the P wave corresponds to the following event**
 (a) Atrial depolarization (b) Ventricular depolarization
 (c) Atrial repolarization (d) Ventricular repolarization
97. **Which of the following cranial nerve helps in accommodating the eye for near vision Tanu**
 (a) Oculomotor (b) Optic (c) Trochlear (d) Facial
98. **Which of the following is TRUE for bone tissue cell differentiation and maturation Tany**
 (a) Osteogenic → Osteoblasts → Osteocytes
 (b) Osteogenic → Osteoblasts → Osteoclasts
 (c) Osteocytes → Osteogenic → Osteoblasts
 (d) Osteoclasts → Osteoblasts → Osteocytes
99. **A drug 'X' is more selective for a subunit of BZD receptors. It lacks effect on slow-wave sleep, minimum residual daytime sedation, no rebound insomnia on discontinuation, low abuse potential Which of the following can be 'X'**
 (a) Flurazepam (b) Flumazenil
 (c) Melatonin (d) Zolpidem
100. **Which of the following is a fourth-generation cephalosporin**
 (a) Ceftriaxone (b) Cefaclor
 (c) Cefuroxime (d) Cefepime
101. **Which of the following metabolite is used to inactivate the vasicotoxic metabolites leading to hemorrhagic cystitis by alkylating agents used in the treatment of cancer**
 (a) Acroline (b) Aldophosphamide
 (c) Cyclophosphamide (d) Mesna
102. **All the following are TRUE with Metoclopramide EXCEPT**
 (a) 5-HT₂ receptor antagonist
 (b) D₂ receptor antagonist
 (c) 5-HT₁ receptor antagonist
 (d) 5-HT₂ receptor agonist
103. **Given below are two statements**
Statement I: Levodopa is metabolized peripherally but capable of crossing Blood Brain Barrier, thus a best drug in treating Parkinsonism
Statement II: Carbidopa crosses Blood Brain Barrier, thus a best combination for protecting levodopa in CNS In light of the above statements,
Choose the CORRECT answer from the options given below
 (a) Both Statement I and Statement II are true
 (b) Both Statement I and Statement II are false
 (c) Statement I is true but Statement II is false
 (d) Statement I is false but Statement II is true
104. ***Which of the following is a Tetracycline antidepressant that has additional Dopamine D₂ receptor blocking and neuroleptic properties as well as a greater tendency to cause seizures in overdose [DROPPED QUESTION]**
 (a) Dothiepin (b) Doxepin
 (c) Trazodone (d) Amoxapine

Pharmacognosy

105. Which one is the right sequence of the intermediates in the biosynthesis of opium alkaloids

- I. Tyrosine II. Reticuline III. Codeine
IV. Morphine V. Thebaine

Choose the CORRECT answer from the options given below:

- (a) I, II, III, IV, V (b) I, II, V, III, IV
(c) I, II, V, IV, III (d) I, II, IV, V, III

106. Arrange the following intermediates in the synthesis of isoprenoids in the right sequence

- I. Squalene II. Farnesyl PP III. Geranyl PP
IV. Acetyl CoA V. Mevalonate

Choose the CORRECT answer from the options given below:

- (a) IV, II, III, I, V (b) IV, V, III, II, I
(c) II, III, IV, I, V (d) V, II, III, I, IV

107. If the resins contain benzoic acids or cinnamic acids they are called

- (a) Colophony (b) Balsams
(c) Glucosins (d) Resene

108. Lycopodium spores are used in quantitative microscopy for the following:

- I. Determine % purity of drugs
II. Estimation of percentage of foreign organic matter
III. Determination of palisade ratio
IV. Measurement of area of single layered tissue

Choose the CORRECT answer from the options given below:

- (a) I, II and III only (b) I, II and IV only
(c) I only (d) II and IV only

109. The ring structure present in strychnine alkaloid is

- (a) Indole (b) Purine
(c) Phenanthrene (d) Imidazole

110. Isabgol belongs to family

- (a) Apocynaceae (b) Plantaginaceae
(c) Solanaceae (d) Golaceae

111. Lignin is a complex polymer which can be stained pink in the tissue using the following chemicals

- (a) Chloral Hydrate and Phloroglucinol
(b) Chlor-Zinc-Iodine
(c) Phloroglucinol and Hydrochloric acid
(d) Chloral Hydrate, Zinc and Ammonia

112. Match the following Ayurvedic formulations under Column I with the process/properties under Column II and choose the CORRECT options

Ayurvedic Formulation (List I)		Process or Property (List II)	
1	Bhasma	P	Semisolid
2	Arista	Q	Calcination
3	Churna	R	Alcohol generation
4	Lehya	S	Dry powder
		T	Decoction

Choose the CORRECT answer from the options given below

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

113. Match the types of glycosides under Column I with their respective example under Column II and choose the correct option

Column I Glycosides		Column II Examples	
1	Anthracene	P	Digitalis
2	Cardiac	Q	Liquorice
3	Saponin	R	Senna
4	Cyanogenetic	S	Ashwagandha
		T	Bitter almond

Choose the CORRECT answer from the options given below

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

114. Quinine and Quinidine differs in

- (a) Chemical nature
(b) Molecular formula
(c) Rotating the plane of polarized light
(d) Precursor of biosynthesis

Other Subjects

115. Establishing a complete structure of _____ is more complex problem than others

- (a) Polysaccharide (b) Protein
(c) Nucleic acid (d) Peptide

116. Which one is NOT the characteristics of the Hexose Monophosphate Pathway

- (a) It produces CO₂
(b) It requires ATP for phosphorylation
(c) It is controlled by inhibition of glucose-6 phosphate dehydrogenase by NADPH (d) It produces ribose-5-phosphate

117. Match List I with List II

Name of Vitamin (List I)		Function of Vitamin (List II)	
1	Riboflavin	P	The electron acceptor for isocitrate dehydrogenase
2	Niacin	Q	Decarboxylation of alpha-ketoglutarate dehydrogenase
3	Thiamine	R	Part of coenzyme A
4	Pantothenic acid	S	Cofactor for succinate dehydrogenase
		T	Enzyme activity regulator, such as for protein kinase C

Choose the **CORRECT** answer from the options given below

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

118. DNA and RNA contain the following two major purine bases

- (a) Guanine and Cytosine (b) Adenine and Guanine
 (c) Thymine and Uracil (d) Adenine and Uracil

119. Match the process of reproduction and genetic exchange under Column I with the explanation under Column II:

Process of Reproduction and Genetic Exchange (List I)			Explanation (List II)
1	Binary fission	P	Transfer of genetic material from the donor to recipient through cell contact
2	Transformation	Q	Common vegetative reproduction
3	Transduction	R	Transfer of genetic material in bacteria through virus
4	Conjugation	S	Horizontal gene transfer by taking up of foreign genetic material (naked DNA)

Choose the **CORRECT** answer from the options given below

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

120. Match List I with List II

FERMENTATION PRODUCTS (List I)		STRAIN USED (List II)	
1	Dextran	P	Clostridium tetani
2	Bacterial amylase	Q	Brevibacterium
3	Glutamic acid	R	Leuconostoc mesenteroides
4	Vitamin B12	S	Bacillus subtilis
		T	Streptomyces olivaceus

Choose the **CORRECT** answer from the options given below

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

121. Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: Exotoxins diffuse freely through the bacterial cell wall into the medium in which the organisms are growing

Reason R: They are water soluble and can pass into the surrounding medium

In the light of the above statements, choose the **CORRECT** answer from the options given below:

- (a) Both A and R are true and R is the correct explanation of A
 (b) Both A and R are true but R is NOT the correct explanation of A
 (c) A is true but R is false
 (d) A is false but R is true

122. Basic dyes are used in microbiological staining. Which of the following statement is **WRONG** about mechanism of staining?

- (a) The positive ions on the surface of bacteria form a colored complex with the dye
 (b) Ionic exchange between the negative charge on the bacteria and positive charge of dye takes place
 (c) Ionic exchange between the positive charge on the bacteria and negative charge of dye takes place
 (d) The neutral charge on the surface of bacteria forms a colored complex with the basic dye

123. Which of the following represents a complete list of products that are offered by a company for sale?

- (a) Product Variety (b) Product Mix
 (c) Product Item (d) Product Line

124. Shift from 'Try my product' to 'Prefer my brand' marketing strategy is done at what stage of product life cycle?

- (a) Introduction (b) Growth
 (c) Maturity (d) Decline

125. Haemophilus influenzae type B (Hib) vaccine is an example of

- (a) Subunit vaccine (b) Toxoid vaccine
 (c) Recombinant protein vaccine (d) Conjugate vaccine

Answer Key

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



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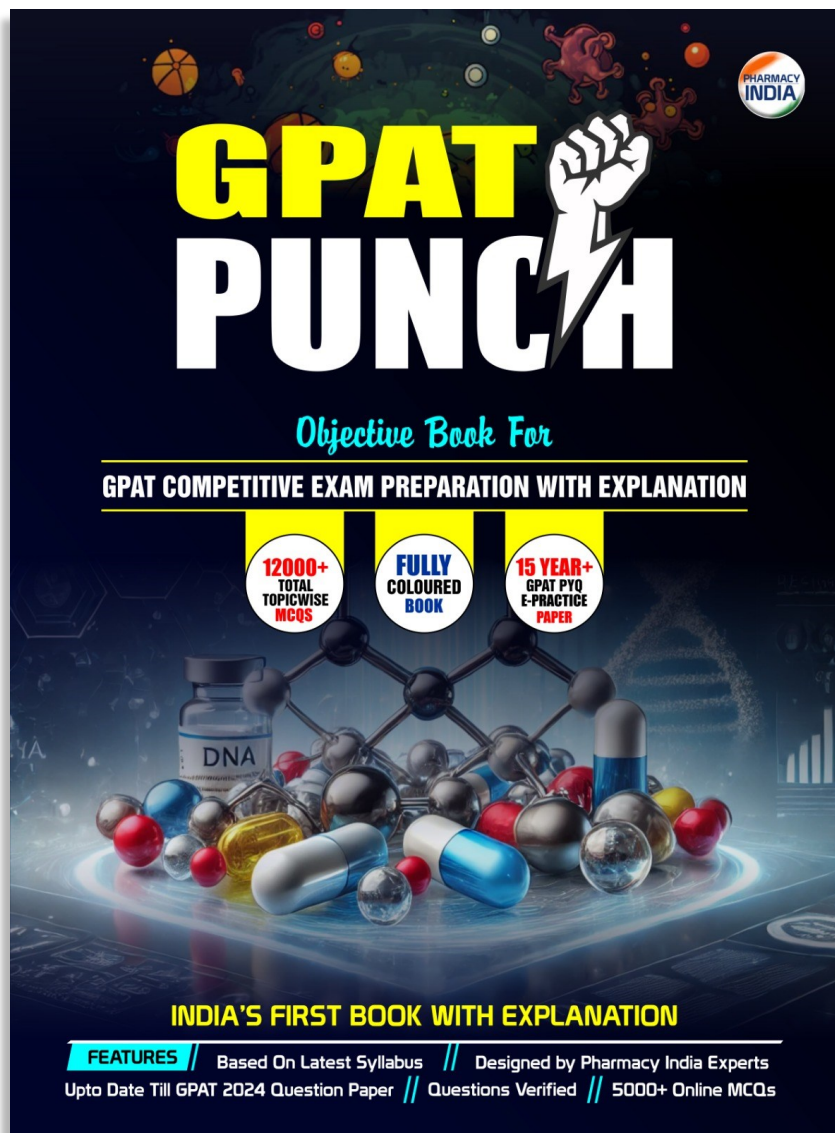
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