

# GPAT-2017

## Pharmaceutics

1. Which of the following is not a thermoplastic resin  
(a) Phenolic (b) Polystyrene  
(c) Polyethylene (d) Polypropylene
2. Which among the following statements describing surface activity for surfactants is incorrect  
(a) Increase in length of hydrocarbon chain decreases surface activity  
(b) Increase in ethylene oxide chain of polyoxy ethylated nonionic surfactant ethylene decrease of surface activity  
(c) Increase in the surface activity results in decrease in surface tension  
(d) Relationship between hydrocarbon chain length and surface activity is expressed by Traube's rule
3. Type IV dissolution apparatus as per USP is  
(a) Flow through cell  
(b) Paddle type apparatus  
(c) Reciprocating cylinder  
(d) Paddle over disk apparatus
4.  $[\text{Weight in pound}/150] \times \text{Adult Dose} = \text{Child dose}$ . The above formula is known as \_\_\_\_\_ in Posology  
(a) Young's formula (b) Dilling's formula  
(c) Clark's formula (d) Friend's formula
5. The type of particle diameter obtained by microscopic method of evaluations is  
(a) Projected diameter  
(b) Surface – volume diameter  
(c) Volume – surface diameter  
(d) Stoke diameter
6. Apparent volume of distribution will be highest in case of the drug with % plasma protein binding  
(a) 10 (b) 89 (c) 50 (d) 68
7. The useful variable form in vitro dissolution test data for IVIVC includes  
(a)  $t_{50\%} - t_{63.2\%}$  (b) Sampling interval  
(c) Sample volume (d) Volume of dissolution fluid
8. For the measurement of particle size of powders, the distance measured between two tangents on opposite sides of the particle parallel to some fixed direction is called  
(a) Feret diameter (b) Martin diameter  
(c) Projected area diameter (d) Edmundson diameter
9. If the drug substance has been substituted wholly or in part by another drug or substance, it is called as  
(a) Spurious drug  
(b) Adulterated drug  
(c) Misbranded drug  
(d) Mixed drug
10. Antioxidant used as blocking agent in sterile product is  
(a) Ascorbic acid esters  
(b) Sodium bisulphate  
(c) Ascorbic acid  
(d) EDTA
11. Bulk product is defined as  
(a) Product completing all processing stages but not necessarily final packing  
(b) A product ready for final dispatch  
(c) Raw material used for making final dosage form  
(d) A defined quantity of raw material from the same batch
12. If the pKa of probability is 7.9 and pH of the infected tissue is 8.9, the fraction of drug in the ionized form will be  
(a) 10% (b) 1% (c) 90% (d) 99%
13. To rule out the probability of dose dumping from an oral CR dosage form, USP has included which sampling time point for in vitro dissolution test where D is normal dosing interval  
(a) 0.50D (b) 0.25D (c) 50-1.0D (d) 1.0-2.0D
14. Hot stage microscopy is an important tool in preformulation studies for the study of  
(a) Pseudopolymorphism  
(b) Particle size measurement  
(c) Microbial contamination  
(d) Compaction behavior
15. Which among the following is a class-I method, used for rendering a solution of drug isotonic with body fluids  
(a) Cryoscopic sphere viscometer  
(b) White – Vincent method  
(c) Sprowls method  
(d) Hammarlund method
16. Hoeppler viscometer is type of  
(a) Failing sphere viscometer  
(b) Capillary viscometer  
(c) Cup and Bob viscometer  
(d) Cone and plate viscometer
17. In Bismuth subgallate suppositories B.P.S, when no strength of the drug is specified, B.P.C directs \_\_\_\_\_ bismuth subgallate per suppository  
(a) 300 mg (b) 200 mg (c) 100 mg (d) 400 mg
18. Hixon Crowell's cube root law of dissolution states that  
(a) There is a change in particle size and surface area during dissolution of drug  
(b) Dissolution process is controlled by diffusion of molecules / ions  
(c) High free energy of activation is required for solution  
(d) Renewal of surface fluid layer around drug particle

19. Chapter IV of which law states that experiment on animals are avoided wherever it is possible to do so; as for example; in medical schools, hospitals, colleges and the like, if other teaching devices such as books, models, films and the like, may equally suffice. Also, that experiments on large animals are avoided when it is possible to achieve the same results by experiments upon small laboratory animals like guinea – pigs, rabbits, frogs and rats
- The prevention of cruelty to animals act, 1960
  - The Pharmacy Act, 1948
  - Drugs and Cosmetics Act, 1940
  - Medicinal and Toilet Preparations Act, 1955
20. Pharmaceutical alternatives possess
- Identical therapeutic moiety / precursor but not in the same amount / dosage form
  - Same amount of therapeutic moiety
  - Same dosage form
  - Same formulation ingredients in exactly same amount of dose
21. Which of the following is an example of hemiesters anionic surfactant for pharmaceutical emulsions
- Sulfosuccinates
  - Sarcosinates
  - Taurates
  - Lactylates
22. The labelling instructions “To be diluted 20 times its volume with water” indicates the dispensed product is a
- Mixture
  - Elixir
  - Linctus
  - Mouthwash
23. Which of the following dosage form of digoxin will provide greater bioavailability based on value of F
- F equals 1.0
  - F equals 0.32
  - F equals 0.62
  - F equals 0.77
24. Which of the following techniques is not useful to detect polymorphs
- DSC
  - HPLC
  - PXRD
  - Melting point determination
25. The method by which different constituents of a liquid mixture can be separated without decomposition of the constituents is
- Distillation under reduced pressure
  - Molecular distillation
  - Steam distillation
  - Fraction distillation
26. Free flowing powders show a flatter cone and have
- Smaller angle of repose
  - Larger angle of repose
  - Intermediate angle of repose
  - None of these
27. The number of glucopyranose units in the structure of alpha cyclodextrins are
- 8
  - 9
  - 7
  - 6
28. Dielectric constant of Ethanol room temperature is almost equal to
- 24
  - 48
  - 54
  - 72
29. The WIPO is the specialized agency of the United Nations. It promotes protection of \_\_\_\_\_ throughout the work
- Intellectual properties
  - World properties
  - Pharmaceutical organizations
  - Finance companies
30. Foaming during liquid filling can be reduced by following ways, EXCEPT
- Increase in speed of the filling line
  - Minimised product turbulence
  - Closed system filling
  - Defoaming device
31. Indicate which of the following statements is true
- A weakly acidic drug is unionised when pH of the solution is atleast 2 pH units below its pKa
  - Acidic drugs are nonionized at pH 9
  - Acidic drugs are less soluble in alkaline solution
  - The higher the pKa of a weak acid, the stronger is acid
32. As per I.P. if the solubility range of a solute is 30 to 100 parts, it will be
- Soluble
  - Freely soluble
  - Sparingly soluble
  - Slightly soluble
33. The preferred rheological behavior of pharmaceutical suspensions is that of
- Pseudoplasticity and thixotrophy
  - Pseudoplasticity
  - Dilatancy and thixotrophy
  - Pseudoplasticity and rheopexy
34. Using Young's rule, calculate the dose for a 5-year-old child if the adult dose is 340mg
- 200 mg
  - 100 mg
  - 400 mg
  - 800 mg
35. Surface tension is categorized as a/an \_\_\_\_\_ factor
- Capacity
  - Intensive
  - Extensive
  - Tolerance

### Pharmacology

36. Which among the following is a structural variant of GABA and is used as a muscle relaxant
- Metocurine
  - Tybamate
  - Baclofen
  - Cyclobenzap
37. A patient receiving warfarin develops rheumatoid arthritis. Which one of the following drugs would be Contraindicated
- Ibuprofen
  - Tolmetin
  - Aurothioglucos
  - Aspirin
38. Which of the following statement regarding cerebral hemisphere is true
- The right and left hemisphere are symmetrical
  - This right more important for spoken and written language
  - The left hemisphere is more important for musical and artistic awareness
  - Hemispheric lateralization is more pronounced in male than in female
39. Which among the following are the salient features of Glucocorticoids
- Gets combined with highly specific cytosolic gluco corticoids

- (b) They promote phagocytosis by macrophages  
 (c) Releases of lytic enzymes  
 (d) Increases lipid Eicosanoids and prostaglandin genes

**40. Match the following agents that cause cancer with the preferable sites for where it might cause**

1. Arsenic	[P] Prostate
2. Benzene	[Q] Angiosarcoma
3. Cadmium Compounds	[R] Leukemia
4. Vinyl chloride	[S] Hemangiosarcoma

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

**41. Insulin and Thyroxine arrive at an organ/tissue / cell at the same time. Thyroxine causes an effect on the organ but insulin does not because**

- (a) The organ cell have receptors for thyroxine but no receptor for insulin  
 (b) Thyroxine is local hormone and insulin is a circulating hormone  
 (c) The target cell in the organ have up – regulated for thyroxine  
 (d) Thyroxine is local hormone and insulin is a circulating hormone

**42. The thymus secretes several hormones related to the immunity. These hormones promote the maturation of T lymphocyte cells. These hormones are**

- (1) Thymosin (2) Thymic humoral factor  
 (3) Thymic factor (4) Interleukins  
 (a) Only 1,2 (b) 1, 2 and 3  
 (c) Only 3 (d) Only 4

**43. Match the following drugs with alteration they produces in structural-functional of kidney**

1. Aminoglycoside Antibiotics	[P] Glomerular abnormality
2. ACE inhibitors	[Q] Tubular epithelial cell Damage
3. Methotrexate	[R] Hemodynamic Mediated kidney injury
4. NSAIDs	[S] Obstructive nephropathy

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

**44. Which of the following drug is associated with the reaction of extreme photosensitivity**

- (a) Niacin (b) Digitals  
 (c) Tetracycline (d) Fluroquinolones

**45. Amantadine is helpful in Parkinson's disease because**

- (a) It liberates dopamine from nerve endings  
 (b) It decreases cholinergic activity  
 (c) It is metabolized into dopamine  
 (d) It increases adrenergic activity

**46. Acetyl Choline is hydrolyzed by enzyme**

- (a) Acetylase (b) Cholinase  
 (c) Acetylcholine esterase (d) Transferase

**47. Phase 0 studies means**

- (a) In vitro studies  
 (b) Part of phase I studies of clinical trials  
 (c) First in human micro dosing studies  
 (d) Studies carried out on small number of animals

**48. Which of the following is a characteristic of cytochrome P – 450**

- (a) Catalyzes aromatic and aliphatic hydroxylations  
 (b) Located in the lipophilic environment of mitochondrial membrane  
 (c) Catalyzes O-, S-, N-methylation reactions  
 (d) Catalyzes conjugation reactions

**49. Clavulanic acid is**

- (a) Inactivates bacterial – lactamase  
 (b) Potent Inhibitor of peptidoglycan synthesis  
 (c) Specific for gram negative bacteria  
 (d) Inhibitor of 50S ribosomal subunit

**50. Many mediators have been implicated in the asthmatic response. The clinical efficacy of pharmacologic intervention with inhibitors or antagonist of the mediators involves following category – EXCEPT**

- (a) Platelet activating factors (b) Anticholinergics  
 (c) Antihistaminics (d) Cytokine inhibitors

**51. In respect of female reproductive cycle, which of the following statements are correct**

1. The female reproductive cycle consists of menstrual phase, a pre-ovulatory phase, ovulation and a post ovulatory phase  
 2. During the menstrual phase, small secondary follicles in the ovary begin to enlarge while the uterus is shedding its lining  
 3. During the pre-ovulatory phase, a dominant follicle continues to grow and begins to secrete estrogen and inhibin while the uterine lining begins to rebuild  
 4. Ovulation results in the release of an ovum and the shedding of the uterus lining to nourish and support the release ovum  
 5. After ovulation, a corpus luteum forms the ruptured follicles and begins to secrete progesterone and estrogen, which it will continue to do throughout pregnancy if the egg is fertilized  
 6. If pregnancy does not occur, then the corpus luteum degenerates into a scar known as corpus albicans and uterine lining is prepared to be shed again  
 (a) 1, 2, 3 and 6 (b) 2, 3, 4 and 6  
 (c) 1, 2, 4 and 5 (d) 1, 4, 5, and 6

**52. All of the following statements regarding estrogen therapy in postmenopausal women are true EXCEPT**

- (a) It restores the loss of bone mass due to osteoporosis  
 (b) It may be useful to treat vasomotor symptoms  
 (c) Administration in a regimen including a progestin  
 (d) It is useful in the treatment of atrophic vaginitis



53. Topical application of timolol to the eye would be expected to induce which of the following  
 (a) Decreased formation of aqueous humor  
 (b) Miosis  
 (c) Mydriasis  
 (d) Increased outflow of aqueous humor
54. All the dopaminergic agonists having affinity for D<sub>2</sub> receptors are clinically used in following conditions EXCEPT  
 (a) Obsessive-compulsive disorder  
 (b) Hyperprolactinemia  
 (c) Acromegaly  
 (d) Parkinsonism
55. In relation to buccal and sublingual route of administration which of the following statement is incorrect  
 (a) Absorption through epithelium is not affected by partition coefficient of the Drug  
 (b) Drug absorption by these routes by pass first pass metabolism  
 (c) There is an optimum log P for sublingual absorption  
 (d) These are preferred routes for anti – anginal drug
56. Dissemination of cancer occurs through one of the following pathway EXCEPT  
 (a) Migration (b) Migration  
 (c) Lymphatic spread (d) Hematogenous spread
57. The process by which the formed elements of blood develop is called as hemopoiesis. In the process of hemopoiesis the stem cells are converted in to myeloid stem cell and subsequently differentiated and are developed into precursor cells. Match the following precursor cells with the formed elements of blood from which they are formed.
- |                   |                  |
|-------------------|------------------|
| 1. Reticulocyte   | [P] Platelets    |
| 2. Megakaryoblast | [Q] Macrophages  |
| 3. Myeloblast     | [R] Erythrocytes |
| 4. Monoblast      | [S] Neutrophils  |
- (a) 1 -[R], 2 -[P], 3 -[S], 4 -[Q]  
 (b) 1 -[P], 2 -[R], 3 -[Q], 4 -[S]  
 (c) 1 -[Q], 2 -[S], 3 -[R], 4 -[P]  
 (d) 1 -[S], 2 -[Q], 3 -[P], 4 -[R]
58. Most accepted mechanism for developing bacterial resistance to sulphonamides is  
 (a) An alternative metabolic pathway for synthesis of essential  
 (b) An increasing capacity to metabolize the drug  
 (c) Increased antagonism of drug  
 (d) An alteration in enzyme that utilizes PABA
59. Which of the following adverse effects is caused by thioridazine  
 (a) Tardive dyskinesia (b) Constipation  
 (c) Orthostatic hypotension (d) None of these
60. After vascular injury, platelets encounter extracellular matrix constituents such as collagen and adhesive glycoprotein. On contact with these proteins platelets undergo

1. Adhesion  
 3. Aggregation  
 (a) 1, 2 and 3  
 (c) 1, 2, 3 and 4
2. Secretion  
 4. Degradation  
 (b) 1, 2 and 4  
 (d) 1,2 and 4

### Pharmacognosy

61. Choose the right combination from the following

Microscopic features	Crude drugs
1. Diacytic stomata and sessile, glandular trichomes	[P] Datura
2. Paracytic stomata and unicellular warty trichomes	[Q] Vasaka
3. Anomocytic Stomata, and glandular, multicellular covering trichomes	[R] Senna
4. Anisocytic stomata and multicellular covering trichomes	[S] Digitalis

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

62. A steroidal phytoconstituent lowering blood sugar is obtained from

- (a) Momordica charantia (b) Quillaja saponaria  
 (c) Dioscorea (d) Glycyrrhiza glabra

63. Which of the following constituents is responsible for color of shellac

- (a) Shelloic (b) laccaic acid  
 (c) Aleuritic (d) All of these

64. Which of the following formulations under ASU system are offered infinite period of shelf life in D and C Act

- (a) Asava & Arishta (b) Churna  
 (c) Ghutika (d) Kwatha

65. Which of the following gums is obtained from endosperm

- (a) Gaur gum (b) Acacia gum  
 (c) Tragacanth gum (d) Sterculia gum

66. A crude drug powder was heated with ferric chloride, water and concentrated hydrochloric acid followed by extraction with chloroform. The chloroform layer was treated with ammonia, the ammonical layer turned pink. The test indicates presence of \_\_\_\_\_ phyto-constituent

- (a) Anthraquinone-C-glycosides (b) Flavanones  
 (c) Cardiac glycosides (d) Saponin glycosides

67. Etoposide and Teniposide are the semisynthetic derivatives of

- (a) Myrrholic acid (b) Podophyllotoxin  
 (c) Abietic acid (d) Umbelliferone

68. Methanolic extract of a crude drug powder when treated with magnesium turnings and concentrated hydrochloric acid turned the solution magenta coloured. The Test is termed as

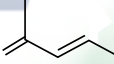


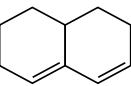
- (a) Shinoda (b) Van Urk's Test  
(c) Keller Killiani test (d) Vetali morin test
69. As per first schedule of Drugs and Cosmetics Act, 1940, following is name of the book under Siddha system of medicine  
(a) Arka Prakasha (b) Yog Ratnakar  
(c) Nagamuni (d) Vrinda Chikitsa
70. Which of the following genera is not the source for tropane alkaloids  
(a) Datura (b) Duboisia (c) Nicotiana (d) Atropa
71. Which of the following alkaloid (form) is used to treat migraine  
(a) Vinca (b) Coca (c) Ergot (d) Belladonna
72. Glycosides are condensation products of  
(a) Protein Aglycone (b) Sugar + Protein  
(c) Sugar + Aglycone (d) Fats Aglycone
73. Which of the following alkaloids has hypotensive activity  
(a) Quinine (b) Quinine  
(c) Reserpine (d) Papaverine

### Pharmaceutical Chemistry

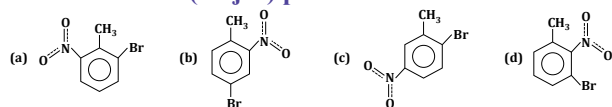
74. Neuropathy is adverse effect of  
(a) Isoniazid (b) Ethambutol  
(c) Pyrazinamide (d) Dapsone
75. The compound 2-(Diethylamino) ethyl [bicyclohex-yl]-1-carboxylate hydrochloride is  
(a) Dicycloverine  
(b) Diphenhydramine  
(c) Both nicotinic and specific antispasmodic  
(d) Diagnostic agent for diagnosis of thyroid gland
76. Condensation product of Ethyl iso pentyl ester of diethyl malonic acid with urea and sodium ethoxide yields  
(a) Amylobarbitone (b) Phenobarbitone  
(c) Pentobarbitone (d) Quinobarbitone
77. An intermediate 3-Chloroaniline 4, 6-disulphonamide on heating with formic acid yields a compound  
(a) 6 chloro 2H-1, 2, 4 Benzothiadiazine 7 sulphonamide  
(b) 3 chloro-2H 1, 2, 4- Benzothiadiazine 7 sulphonamide  
(c) Used in treatment of urinary tract infections  
(d) Used as antibacterial
78. Which among the following statements related to ceric sulphate as oxidizing agent, as titrant are correct  
(a) Ce (IV) during reaction exists as an anionic complex in media of Sulphuric acid  
(b) Ionic equation is  $Ce \rightarrow Ce^{4+} + e$   
(c) Formal potential of Ce (III) Ce (II) couple is 1  
(d) Ce (IV) does not permit use of HCl as reducing media
79. Naphazoline is  
(a) Is used for relief of nasal congestion  
(b) Exhibits peripheral beta-adrenoceptor stimulant  
(c) Is a pyrazoline derivative  
(d) Chemically, is 1H Imidazole, 3,4-dihydro-2-(3-naphthylmethyl) monohydrochloride

80. Match the following adrenergic drugs with their receptor affinity

1. Epinephrine	[P] More alpha 1, no beta 1, beta 2 & dopamine
2. Noradrenaline	[Q] More alpha 1 & beta 1, less beta 2, no dopamine
3. Phenylephrine	[R] More beta 1 & beta 2, no alpha 1 and dopamine
4. Dobutamine	[S] More alpha 1 & beta 1, no beta 2 & dopamine

- (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-[Q], 3-[R], 4-[P]
81. Which among the following is an incorrect statement with regard to the drug Dantrolene  
(a) It is a pyrazoline derivative  
(b) It is an imidazoline analogue  
(c) It is a nitrophenylfurfurylidene derivative  
(d) It is a skeletal muscle relaxant
82. Diazepam is not suitable for peroral sustained release form since  
(a) Is not absorbed in lower intestine  
(b) It has biological half-life greater than twelve effects hour  
(c) It has biological half-life less than one hour  
(d) It has a skeletal muscle relaxant
83. In a free radical reaction, free radicals are formed at  
(a) Initiation (b) Propagation step  
(c) Termination (d) Both (a) and (b)
84. Which of the following dienes can undergo Diels-Alder reaction most readily
- (a)  (b)   
(c)  (d) 
85. When trans-2-butene is treated with bromine an anti-addition of bromine yields meso 2,3-dibromobutane. Select the correct statement regarding the reaction from the following  
(a) The reaction is stereoselective as well as stereo specific.  
(b) The reaction is stereoselective and not stereo specific  
(c) The reaction is non stereoselective as well as non-stereo specific  
(d) The reaction is stereo specific and not stereo selection
86. Reduction of imines to give amines in protic solvents can be carried out by one of the following reagents. Select the correct reagent  
(a) Sodium hydride  
(b) Sodium chloride and HCl  
(c) Lithium aluminium chloride  
(d) Sodium cyanoborohydride

87. In the reaction of 2-nitrotoluene with bromine in presence of iron, which of the product shown below is the most abundant (major) product



88. Which of the following cannot react as a nucleophile

- (a)  $(\text{CH}_3)_4\text{N}^+$  (b)  $\text{CH}_3\text{NH}_2$   
(c)  $(\text{CH}_3)_2\text{NH}$  (d)  $(\text{CH}_3)_3\text{N}$

89. Which of the following compounds will be oxidized by  $\text{CrO}_3$  in acid

- (a) 4-Methylcyclohexene  
(b) 3-Methyl 3-hydroxycyclohexanone  
(c) 4, 4-Dimethyl-1-methyl-1, 3-cyclohexandiol  
(d) 2-Methylcyclohexanone

90. Which of the following compounds absorbs at the longest wavelength

- (a) 1, 3, 5 - Hexatriene  
(b) 1,3,5,7-Octatetraene  
(c) 1,7-Diphenyl-1,3,5-heptatriene  
(d) 1,6-Diphenyl-1,3,5-heptatriene

91. Which of the following reagents will reduce a disubstituted alkyne to trans - alkene

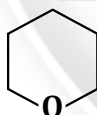
- (a) Na and  $\text{NH}_3$  (b)  $\text{LiAlH}_4$   
(c)  $\text{B}_2\text{H}_6$  (d) Pd and  $\text{H}_2$

92. Which of the following statement is true about follow-ing reaction

- (a) The product will not have a stereo center  
(b) The product will have R configuration  
(c) The product will not have S configuration  
(d) The reaction will happen with racemization

93. Which functional group is present in the molecule shown below

- (a) Amide  
(b) Alcohol  
(c) Ester  
(d) Ether



94. Chemical class of drugs that are susceptible to oxidation are

- (a) Esters (b) Lactam (c) Sterols (d) Carbamate

95. The only analgesic acting centrally is

- (a) Methadone (b) Naloxone  
(c) Tramadol (d) Naloxone Congeners

96. Which among the following describe the characteristic features of Tetracycline

- (a) Undergoes epimerization in solutions having intermediate pH range  
(b) Forms anhydrous tetracycline in presence of acidic  
(c) Forms Minocycline in basic medium  
(d) Forms stable chelate complexes with potassium ions

- (a) 577.2 nm (b) 587.2 nm  
(c) 567.2 nm (d) 597.2 nm

98. Which among the following statements on electro analytical methods are correct

- (a) Measures conductance between two electrodes with AC powered Wheatstone bridge  
(b) Polarography involves plotting of conductance - voltage  
(c) Potentiometry involves application of Ilkovic equation  
(d) Coulometry involving application of Nernst law relating equivalence between quantities

99. Separating techniques such as gas chromatography and liquid chromatography are not appropriate for separation of amino acids. Select correct reason from the following

- (a) Amino acids high polarity substances  
(b) Amino acids are low polarity substances  
(c) Amino acids are non-polar substances  
(d) Amino acids lowly charges substances

100. Which among the following rules about spin - spin coupling and bond multiplicities are correct with regard to NMR spectra

- (a) Coupling constant rarely exceeds 20 cps while chemical shifts are over 1000 cps  
(b) Spin - Spin interactions are dependent of strength of the applied field  
(c) Coupling constants increase with distance  
(d) Equivalent nuclei interact with each other to show interaction

101. Chemical interferences are common than spectral interferences due to

- (a) Formation of compounds of low volatility  
(b) Ionization in flames  
(c) Increase in rate of atomization  
(d) No shift in ionization equilibrium

102. One of the principles upon which HPLC detector functions is

- (a) Redox property of solute is the basis for functioning of electrochemical detectors  
(b) Fluorimetric detector has high selectivity and low sensitivity  
(c) Small difference in Refractive Index of mobile phase permit precise measurements in Refractive Index detectors  
(d) UV detector function based on its ability to detector

103. Which among the following electronic systems are not involved in the origin of UV spectrum

- (a) s and p shell electrons (b)  $\sigma$  and  $\pi$  electrons  
(c) Charge transfer electrons (d) d and f shell electrons

## Other Subjects

104. Rubella virus is associated with disease

- (a) Progressive encephalitis  
(b) Enterovirus infection  
(c) Yellow fever  
(d) Brucellosis

## Pharmaceutical Analysis

97. If the excitation energy of the resonance level is 2.10 eV (when  $hc=12,330$ ) then the wave-length of resonance line of sodium atoms is



- 105. The major component of liquid glucose is \_\_\_\_\_ and is prepared from**  
 (a) Maltose, pectin (b) Dextrin, Starch  
 (c) Dextrose, starch (d) Glucose, Starch
- 106. The major differences between the prokaryotic and eukaryotic protein synthesis mechanisms are in which part of the process**  
 (a) The initiation of synthesis  
 (b) The chain elongation process  
 (c) Charge transfer electrons  
 (d) None of these
- 107. An inventory turnover of \_\_\_\_\_ a year is considered satisfactory**  
 (a) For or six time (b) Six to eight times  
 (c) One to two times (d) None of these
- 108. In new product development process, after analysis of business next step to be taken is**  
 (a) Test marketing (b) Penetration marketing  
 (c) Brand marketing (d) Individual marketing
- 109. Herpes viruses are large encapsulated viruses that have double stranded DNA genome that encodes approximately 70 proteins. It causes acute infection followed by latent infection in which virus persist in noninfectious form with periodic reactivation and shedding of infectious virus. Following are the examples of such herpesvirus-EXCEPT**  
**[P] Epstein-Barr Virus [Q] Herpes simplex**  
**[R] Varicella Zoster [S] Cytomegalovirus**  
 (a) [Q] only (b) [Q] and [R]  
 (c) [P], [Q] and [R] (d) [P], [Q], [R] and [S]
- 110. A fatty acid not synthesized in human body and has to be supplied**  
 (a) Stearic acid (b) Oleic acid  
 (c) Palmitic acid (d) Linolenic acid
- 111. SDS is used in PAGE of a mixture of proteins for their efficient separation on the gel SDS, in the experiment is used to**  
 (a) Have uniform charge density on the proteins.  
 (b) Stabilize the proteins  
 (c) Decrease the surface tension of buffer  
 (d) Solubilize the proteins
- 112. In DNA replication the newly added nucleotide is joined to the growing DNA strand by an enzyme**  
 (a) DNA polymerase (b) DNA ligase  
 (c) Restriction endonuclease (d) Reverse transcriptase
- 113. Cells that contribute for immune system are**
- |                  |                         |
|------------------|-------------------------|
| 1. T Lymphocytes | 2. Eosinophil           |
| 3. B Lymphocytes | 4. Dendritic cells      |
| 5. Erythrocytes  | 6. Natural killer cells |
- (a) 1, 3, 4 and 6 (b) 1, 2, 4 and 6  
 (c) 1, 3, 5 and 6 (d) 1, 2, 5 and 6
- 114. A reporting relationship in which an employee receives orders from and reports to only one supervisor is known as**  
 (a) Unity of command (b) Centralisation  
 (c) Decentralisation (d) Line of authority
- 115. The most commonly used test of sensitivity to antimicrobial agent is**  
 (a) Kirby- Bauer techniques  
 (b) Immunodiffusion techniques  
 (c) Oudin procedure  
 (d) Ouchterlony procedure
- 116. Product , \_\_\_\_\_ and Promotion are s of marketing**  
 (a) Prince and place  
 (b) Place  
 (c) Process  
 (d) Production, Process, Price, Production
- 117. Beta oxidation of fatty acids takes place in**  
 (a) Mitochondria (b) Cytoplasm  
 (c) Nucleus (d) Chloroplast
- 118. The first vaccine was discovered by**  
 (a) DeBary (b) Paul Ehrlich  
 (c) Robert Koch (d) Edward Jenner
- 119. Following are the list of various inherited metabolic disorders that can affect functioning of liver**  
**1. Primary biliary cirrhosis**  
**2. Glycogen storage disease**  
**3. Gilbert's syndrome**  
**4. Haemochromatosis**  
**5. Wilson , s disease**  
 (a) 1, 2, 3, 4 (b) 2, 3, 4, 5  
 (c) 1, 3, 4, 5 (d) 1, 2, 4, 5
- 120. High lightening differences among brands within the same product category is**  
 (a) Product brand (b) Brand launch  
 (c) Product differentiation (d) Branding
- 121. The Michaelis-Menten hypothesis**  
 (a) Postulates the formation of an enzyme substrate complex  
 (b) Enables us to calculate the isoelectric point of an enzyme  
 (c) States that the rate of a chemical reaction maybe independent of substrate concentration  
 (d) States that the reaction rate is proportional to substrate concentration
- 122. The largest gene in human is**  
 (a) Dystrophin (b) Titin  
 (c) Insulin (d) Phosphofructokinase
- 123. A labeled piece of DNA that is complementary to the sequence of DNA you are interested in, say the gene you are trying to put into cells, is called as**  
 (a) A probe (b) A receptor  
 (c) A epitope (d) A target
- 124. The Michaelis-Menten equation for standard for saturated active transport system is**  
 (a)  $V_{\max} = k_{\text{cat}}[E_0]$  (b)  $V_{\max} = k_m$   
 (c)  $V_{\max} = k_m[S]$  (d) None of these
- 125. In humans end product of purine catabolism is**  
 (a) Uric acid (b) Urea  
 (c) Purine oxide (d) Xanthine

## Answer Key

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

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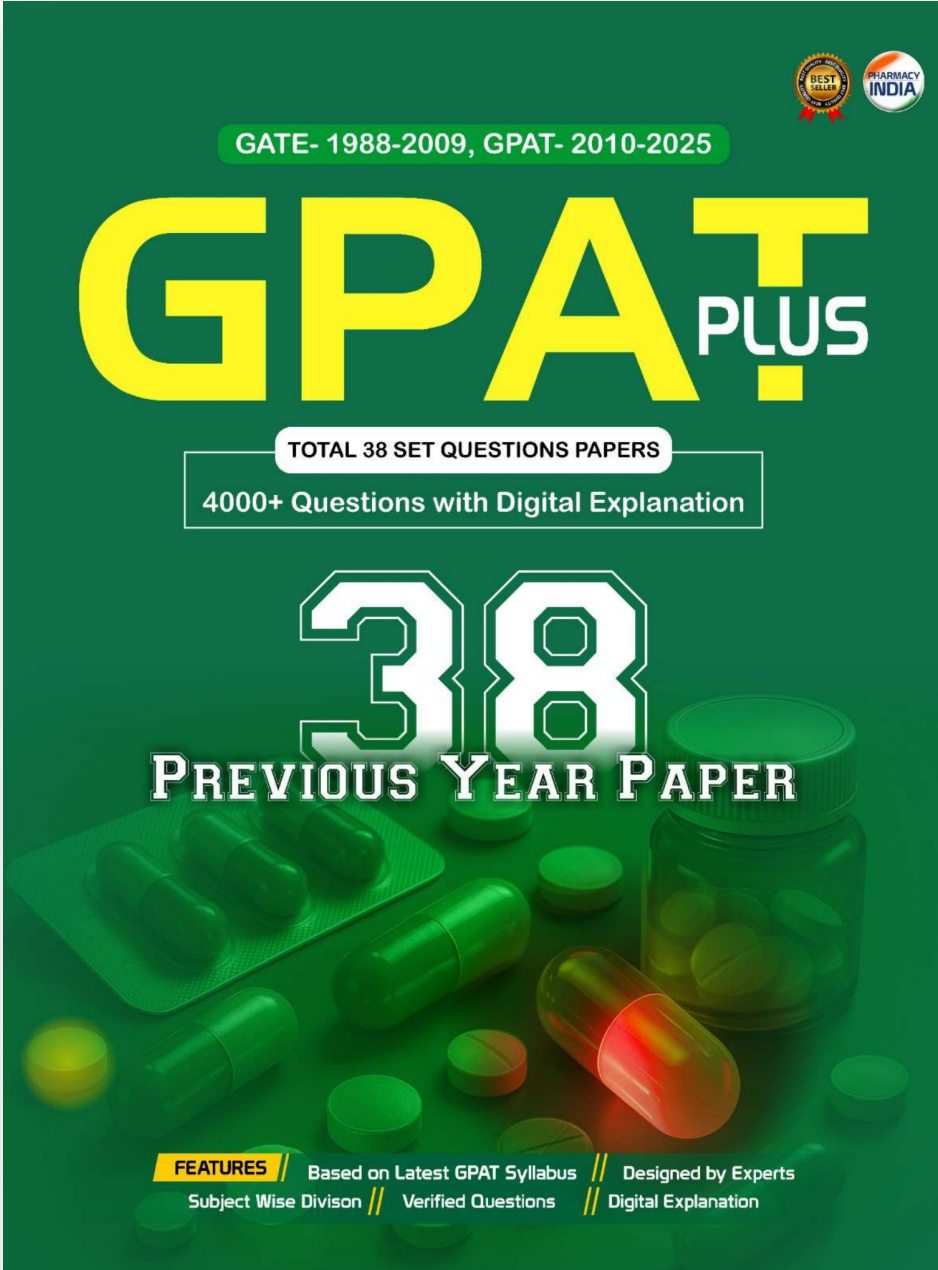



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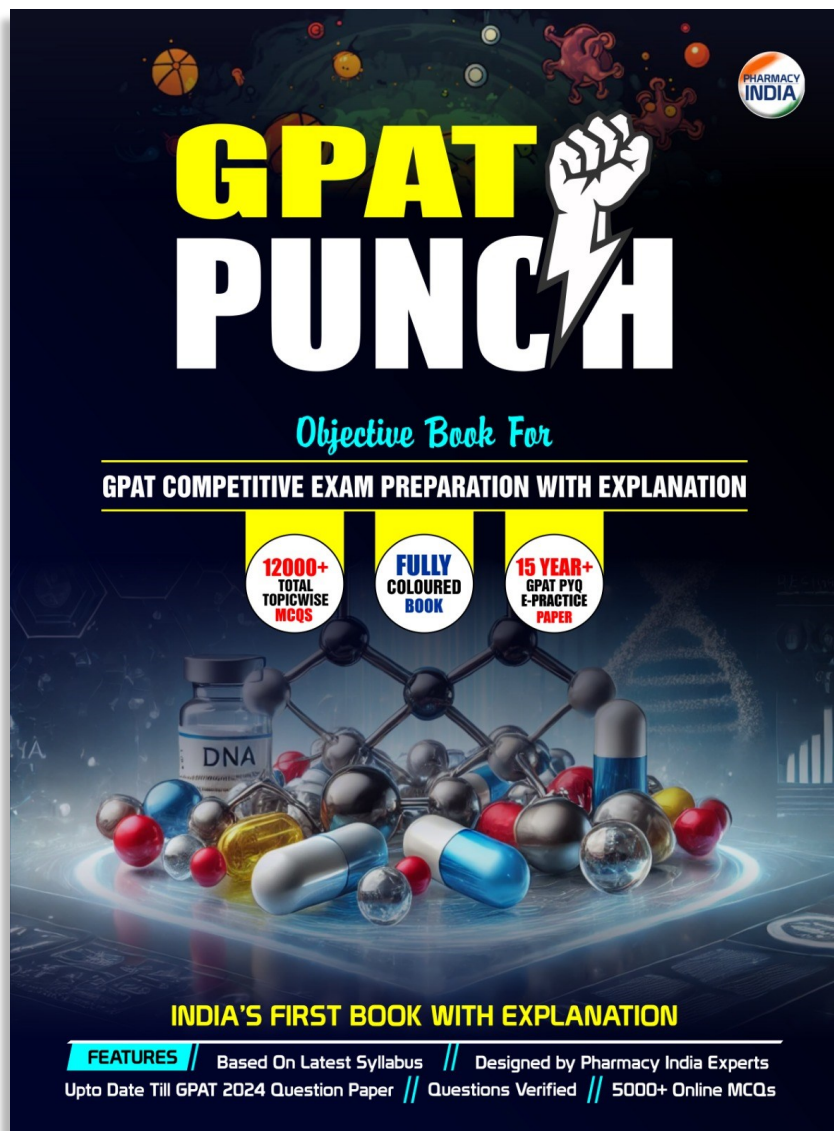
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