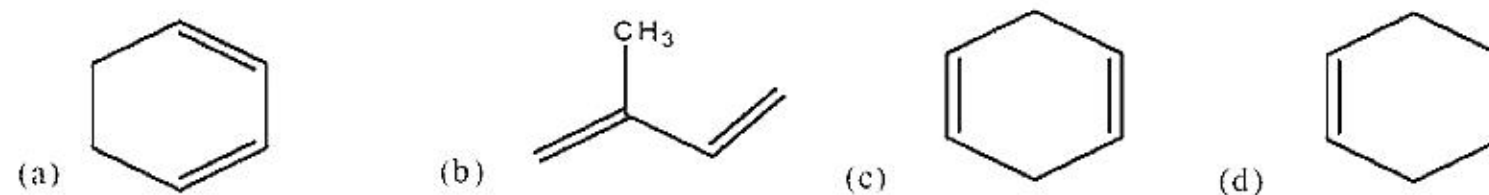
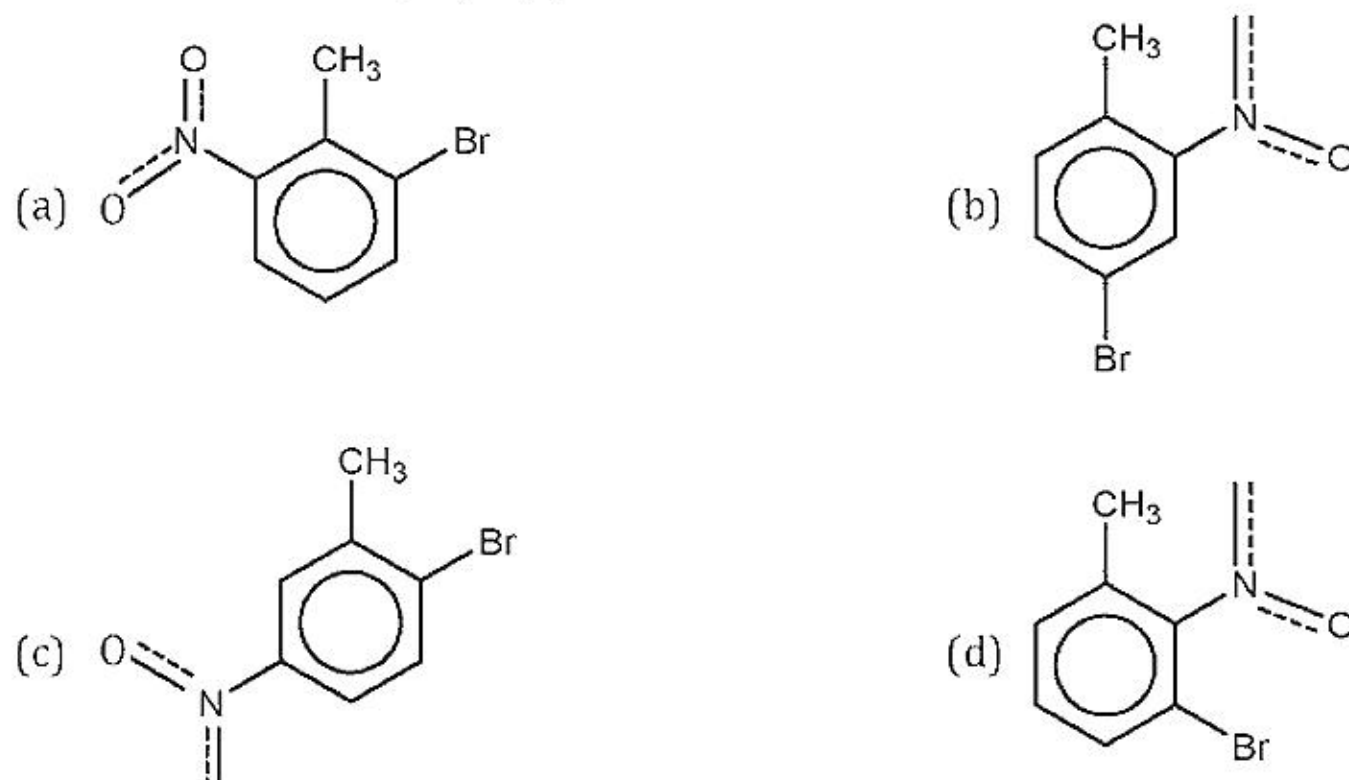


GPAT QUESTION PAPER 2017

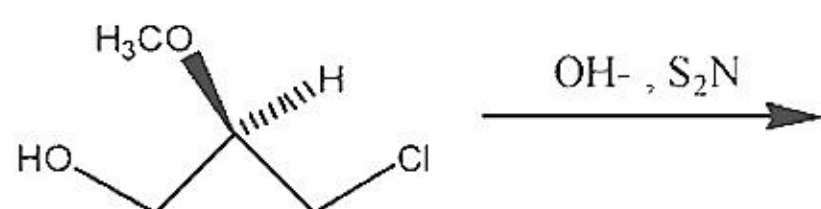
- In a free radical reaction, free radicals are formed at
 - Initiation step
 - Propagation step
 - Termination step
 - Both (a) and (b)
- Which of the following dienes can undergo Diels-Alder reaction most readily



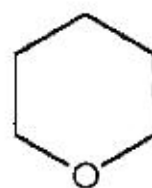
- Separating techniques such as gas chromatography and liquid chromatography are not appropriate for separation of amino acids. Select correct reason from the following
 - Amino acids high polarity substances
 - Amino acids are low polarity substances
 - Amino acids are non polar substances
 - Amino acids lowly charges substances
- 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
 - The reaction is stereoselective as well as stereo specific
 - The reaction is stereoselective and not stereo specific
 - The reaction is nonstereoselective as well as non stereo specific
 - The reaction is stereo specific and not stereo selection
- Reduction of imines to give amines in protic solvents can be carried out by one of the following reagents. Select the correct reagent
 - Sodium hydride
 - Sodium chloride and HCl
 - Lithium aluminium chloride
 - Sodium cyanoborohydride
- In the reaction of 2-nitrotoluene with bromine in presence of iron, which of the product shown below is the most abundant (major) product



7. Which of the following cannot react as a nucleophile
- (a) $(\text{CH}_3)_4\text{N}^+$ (b) CH_3NH_2
 (c) $(\text{CH}_3)_2\text{NH}$ (d) $(\text{CH}_3)_3\text{N}$
8. Which of the following compounds will be oxidized by CrO_3 in acid
- (a) 4-Methylcyclohexene (b) 3-Methyl 3-hydroxycyclohexanone
 (c) 4,4-Dimethyl-1-methyl-1,3-cyclohexandiol (d) 2-Methylcyclohexanone
9. 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
10. Which of the following reagents will reduce a disubstituted alkyne to trans-alkene
- (a) Na and NH_3 (b) LiAlH_4
 (c) B_2H_6 (d) Pd and H_2
11. Which of the following statement is true about following 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 racemisation
12. Which functional group is present in the molecule shown below



- (a) Amide (b) Alcohol (c) Ester (d) Ether
13. Match the following agents that cause cancer with the preferable sites for where it might cause
- | | |
|----------------------|---------------------|
| 1. Arsenic | (a) Prostate |
| 2. Benzene | (b) Angiosarcoma |
| 3. Cadmium Compounds | (c) Leukemia |
| 4. Vinyl chloride | (d) Hemangiosarcoma |
- (a) 1 - d; 2 - c; 3 - a; 4 - b (b) 1 - b; 2 - a; 3 - c; 4 - d
 (c) 1 - c; 2 - d; 3 - b; 4 - a (d) 1 - a; 2 - b; 3 - d; 4 - c
14. If the pK_a of lidocaine 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%
15. Which among the following are the salient features of Glucocorticoids
- (a) Gets combined with highly specific cytosolic glucocorticoids
 (b) They promote phagocytosis by macrophages

- (c) Releases of lytic enzymes
 (d) Increases lipid eicosanoids and prostaglandin gene
16. The most commonly used test of sensitivity to antimicrobial agent is
 (a) Kirby- Bauer techniques (b) Immunodiffusion techniques
 (c) Qudin procedure (d) Ouchter- Ion procedure
17. 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
18. Product,.....and Promotion are four 'P's of marketing
 (a) Price and Place (b) Place
 (c) Process (d) Production, Process, Price, Production
19. Insulin and thyroxin 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 not for insulin
 (b) Thyroxin is a lipid -soluble hormone and insulin
 (c) The target cell in the organ have up-regulated for
 (d) Thyroxin is local hormone and insulin is a circula
20. 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
21. 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 undesirable side effects
22. Antioxidant used as blocking agent in sterile product is
 (a) Ascorbic acid esters (b) Sodium bisulphate
 (c) Ascorbic acid (d) EDTA
23. Many mediators have been implicated in the asthmatic response. The clinical efficacyof pharmacologic intervention with inhibitors or antagonist of the mediators involves following category - except
 (a) Platelet activating factors (b) Anticholinergics
 (c) Antihistaminics (d) Cytokine inhibitors
24. Match the following adrenergic drugs with their receptor affinity
 (1) Epinephrine (a) More alpha 1, no beta 1, beta 2 & dopamine
 (2) Noradreanline (b) More alpha 1 & beta 1, less beta 2, no dopamine
 (3) Phenylephrine (c) More beta 1 & Beta 2, no alpha 1 and dopamine
 (4) Dobutamine (d) More alpha 1 & beta 1 , no beta 2 & dopamine

41. Naphazoline
- (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
42. A patient receiving warfarin develops rheumatoid arthritis. Which one of the following drugs would be Contraindicated
- (a) Ibuprofen
 - (b) Tolmetin
 - (c) Aurothioglucose
 - (d) Aspirin
43. 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 _____ phytoconstituent
- (a) Anthraquinone-C-glycosides
 - (b) Flavanones
 - (c) Cardiac glycosides
 - (d) Saponin glycosides
44. The first vaccine was discovered by
- (a) DeBary
 - (b) Paul Ehrlich
 - (c) Robert Koch
 - (d) Edward Jenner
45. Type IV dissolution apparatus as per USP is
- (a) Flow through cell
 - (b) Paddle type apparatus
 - (c) Reciprocating cylinder
 - (d) Paddle over disk apparatus
46. Hoeppler viscometer is a type of
- (a) Falling sphere viscometer
 - (b) Capillary viscometer
 - (c) Cup and Bob viscometer
 - (d) Cone and plate viscometer
47. Following are the list of various inherited metabolic disorders that can affect functioning of liver
- a. Primary biliary cirrhosis
 - b. Glycogen storage disease
 - c. Gilbert's syndrome
 - d. Haemochromatosis
 - e. Wilson's disease
- (a) a, b, c, d
 - (b) b, c, d, e
 - (c) a, c, d, e
 - (d) a, b, d, e
48. 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
49. Which among the following statements describing surface activity for surfactants is incorrect
- Increase in length of hydrocarbon chain decreases surface activity
 - Increase in ethylene oxide chain of polyoxy ethyl alcohol Increase in surface activity
 - Increase in surface activity results in decrease length of hydrocarbon chain
 - Relationship between hydrocarbon chain length and hydrophobicity
50. Surface tension is categorized as a/an _____ factor
- Capacity
 - Intensive
 - Extensive
 - Tolerance
51. Which of the following gums is obtained from endosperm
- Guar gum
 - Acacia gum
 - Tragacanth gum
 - Sterculia gum
52. High lightening differences among brands within the same product category is _____
- Product brand
 - Brand launch
 - Product differentiation
 - Branding
53. Hot stage microscopy is an important tool in preformulation studies for the study of
- Pseudopolymorphism
 - Particle size measurement
 - Microbial contamination
 - Compaction behaviour
54. In Bismuth subgallate suppositories B.P.C, when no strength of the drug is specified, B.P.C directs _____ bismuth subgallate per suppository
- 300 mg
 - 200 mg
 - 100 mg
 - 400 mg
55. The Michaelis-Menten hypothesis
- Postulates the formation of an enzyme-substrate complex
 - Enables us to calculate the isoelectric point of an enzyme
 - States that the rate of a chemical reaction may be independent of substrate concentration
 - States that the reaction rate is proportional to substrate concentration
56. The largest gene in human is _____
- Dystrophin
 - Titin
 - Insulin
 - Phosphofructokinase
57. Which of the following techniques is not useful to detect polymorphs
- DSC
 - HPLC
 - PXRD
 - Melting point determination
58. Which of the following constituents is responsible for colour of shellac
- Shelloic acid
 - Laccaic acid
 - Aleuritic acid
 - All of the above
59. Match the following drugs with alteration they produce in structural-functional of kidney
- | | |
|--------------------------------|------------------------------------|
| (1) Aminoglycoside Antibiotics | (A) Glomerular abnormality |
| (2) ACE inhibitors | (B) Tubular epithelial cell Damage |

- (3) Methotrxate (C) Hemodynamic Mediated kidney injury
- (4) NSAIDs (D) Obstructure nephrophathy
- (a) 1 - B; 2 -C ; 3 - D; 4 -A (b) 1 - A; 2-B; 3 - C; 4- D
- (c) 1 - C; 2-D; 3 - A; 4- B (d) 1 - D; 2-A; 3 - B; 4- C
60. 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
61. 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
62. Chapter IV of which law states that experiments 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 larger 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
- (a) The prevention of cruelty to animal act,1960
- (b) The Pharmacy Act, 1948
- (c) Drugs and Cosmetics Act, 1940
- (d) Medicinal and Toilet Preparations Act, 1955
63. 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
64. 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

74. An intermediate 3-Chloroaniline 4,6-disulphonamide on heating with formic acid yields a compound
- 6-chloro-2H-1,2,4-benzothiadiazine-7-sulphonamide
 - 3-chloro-2H-1,2,4-benzothiadiazine-7-sulphonamide
 - Used in treatment of urinary tract infections
 - Used as antibacterial
75. Acetyl Choline is hydrolyzed by enzyme
- Acetylase
 - Cholinase
 - Acetylcholinesterase
 - Transferase
76. Rubella virus is associated with disease
- Progressive encephalitis
 - Enterovirus infection
 - Yellow fever
 - Brucellosis
77. Which among the following electronic systems are not involved in the origin of UV spectrum
- s and p shell electrons
 - sigma and pi electrons
 - Charge transfer electrons
 - d and f shell electrons
78. Which of the following is not a thermoplastic resin
- Phenolic plastic resin
 - Polystyrene
 - Polyethylene
 - Polypropylene
79. Choose the right combination from the following
- | | |
|--|---------------|
| (1) Diacytic stomata and sessile Trichome | (A) Datuar |
| (2) Paracytic stomata and Unicellular and multi cellular | (B) Vasaka |
| (3) Anomocytic stomata and Unicellular and multi cellular Trichome | (C) Senna |
| (4) Anisocytic stomata and Multicellular covering trichome | (D) Digitalis |
- 1-B, 2-C, 3-D, 4-A
 - 1-C, 2-D, 3-A, 4-B
 - 1-A, 2-D, 3-B, 4-C
 - 1-D, 2-B, 3-A, 4-C
80. 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
81. Topical application of timolol to the eye would be expected to induce which of the following
- Decreased formation of aqueous humor
 - Miosis
 - Mydriasis
 - Increased outflow of aqueous humor

82. The major component of liquid glucose isand is prepared from _____
 (a) Maltose, Pectin (b) Dextrin, Starch (c) Dextrose, Starch (d) Glucose, Starch
83. 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
84. Which of the following is an example of hemiesters anionic surfactant for pharmaceutical emulsions
 (a) Sulfosuccinates (b) Sarcosinates (c) Taurates (d) Lactylates
85. 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) The chain termination process (d) None of the above
86. 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
87. Glycosides are condensation products of
 (a) Protein + aglycone (b) Sugar + Protein
 (c) Sugar + aglycone (d) Fats + aglycone
88. Which of the following dosage form of digoxin will provide greater bioavailability based on value of F
 (a) F equals 1.0 (b) F equals 0.32 (c) F equals 0.62 (d) F equals 0.77
89. The process by which the formed elements of blood develop is call 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 | (A) Platelets |
| (2) Megakaryoblast | (B) Macrophages |
| (3) Myeloblast | (C) Erythrocytes |
| (4) Monoblast | (D) Neutrophils |
- (a) 1-C, 2-A, 3-D, 4-B (b) 1-A, 2-C, 3-B, 4-D
 (c) 1-B, 2-D, 3-C, 4-A (d) 1-D, 2-B, 3-A, 4-C
90. Using Young's rule, calculate the dose for a 5 year old child if the adult dose is 340mg
 (a) 200 mg (b) 100 mg (c) 400 mg (d) 800 mg
91. 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 quantity of electricity passed and amount of compound generated at electrodes
92. 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
93. Phase 0 studies means
 (a) In vitro studies
 (b) Part of phase I studies of clinical trials
 (c) First in human microdosing studies
 (d) Studies carried out on small number of animals
94. Condensation product of Ethyl isopentyl ester of diethyl malonic acid with urea and sodium ethoxide yields
 (a) Amylobarbitone (b) Phenobarbitone
 (c) Pentobarbitone (d) Quinobarbitone
95. Clavulanic acid is
 (a) Inactivates bacterial - lactamase (b) Protein inhibitor of peptidoglycan synthesis
 (c) Specific for gram negative bacteria (d) Inhibitor of 50S ribosomal subunit
96. The method by which different constituents of a liquid mixture can be separated without decomposition of the constituents is
 (a) Distillation under reduced pressure (b) Molecular distillation
 (c) Steam distillation (d) Fractional distillation
97. The preferred rheological behavior of Pharmaceutical suspensions is that of
 (a) Pseudoplasticity and thixotrophy (b) Pseudoplasticity
 (c) Dilatancy and thixotrophy (d) Pseudoplasticity and rheopexy,
98. An inventory turnover of a year is considered satisfactory
 (a) Four to six times, Six (b) To eight times
 (c) One to two times (d) None of the above
99. The number of glucopyranose units in the structure of alpha cyclodextrins are
 (a) 8 (b) 9 (c) 7 (d) 6
100. The compound 2 - (Diethylamino) ethyl [bicyclohexyl] - 1-carboxylate hydrochloride is
 (a) Dicycloverine (b) Diphenhydramine
 (c) Both nicotinic and specific antispasmodic, (d) Diagnostic agent for diagnosis of thyroid gland,

101. 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
102. Which of the following alkaloid (form) is used to treat migraine
- (a) Vinca (b) Coca (c) Ergot (d) Belladonna
103. Free flowing powders show a flatter cone and have _____
- (a) Smaller angle of repose (b) Larger angle of repose,
(c) Intermediate angle of repose (d) None of the above,
104. The WIPO is the specialized agency of the United Nations. It promotes protection of _____ throughout the world
- (a) Intellectual properties (b) World properties
(c) Pharmaceutical organizations (d) Finance companies
105. Herpesviruses 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 persists in noninfectious form with periodic reactivation and shedding of infectious virus. Following are the examples of such herpesvirus –except
- (a) Epstein-Barr Virus (b) Herpes simplex
(c) Varicella Zoster (d) Cytomegalovirus
106. A fatty acid not synthesized in human body and has to be supplied in diet is
- (a) Stearic acid (b) Oleic acid (c) Palmitic acid (d) linolenic acid
107. Chemical class of drugs that are susceptible to oxidation are
- (a) Esters (b) Lactam (c) Sterols (d) Carbamates
108. The only analgesic acting centrally is _____
- (a) Methadone (b) Naloxane (c) Tramadol (d) Naloxane
109. Neuropathy is adverse effect of
- (a) Isoniazid (b) Ethambutol (c) Pyrazinamide (d) Dapsone
110. As per I.P. if the solubility range of a solute is 30 to 100 parts, it will be
- (a) Soluble (b) Freely soluble (c) Sparingly soluble (d) Slightly soluble
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. Indicate which of the following statements is true
- (a) A weakly acidic drug is unionised when pH of the solution is at least 2 pH units below its pKa
 - (b) Acidic drugs are nonionized at pH 9
 - (c) Acidic drugs are less soluble in alkaline solution
 - (d) The higher the pKa of a weak acid, the stronger is acid
113. Dissemination of cancer occurs through one of the following pathway - except
- (a) Migration
 - (b) Direct seeding
 - (c) Lymphatic spread
 - (d) Hematogenous spread
114. Which of the following alkaloids has hypotensive activity
- (a) Emetine
 - (b) Quinine
 - (c) Reserpine
 - (d) Papaverine
115. 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
116. The Michaelis-Menten equation for standard for saturated active transport system is-
- (a) $V_{max} = k_{cat}[E_0]$
 - (b) $V_{max} = k_m$
 - (c) $V_{max} = k_m[S]$
 - (d) None
117. Which among the following describe the characteristic features of Tetracycline
- (a) Undergoes epimerization in solutions having intermediate pH range
 - (b) Forms Anhydroustetracycline in presence of acidic
 - (c) Forms Minocycline in basic medium
 - (d) Forms stable chelate complexes with potassium ions
118. 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
119. Dielectric constant of Ethanol at room temperature is almost equal to
- (a) 24
 - (b) 48
 - (c) 54
 - (d) 72

120. Foaming during liquid filling can be reduced by following ways, except
 (a) Increase in speed of the filling line (b) Minimised product turbulence
 (c) Closed system filling (d) Defoaming device
121. 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 _____
 (a) 577.2 nm (b) 587.2 nm (c) 567.2 nm (d) 597.2 nm
122. After vascular injury, platelets encounter extracellular matrix constituents such as collagen and adhesive glycoprotein. On contact with these proteins platelets undergo
 1. Adhesion
 2. Secretion
 3. Aggregation
 4. Degradation
 (a) 1, 2 and 3 (b) 1, 2 and 4 (c) 1, 2, 3 and 4 (d) 1, 2 and 4
123. 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
124. In humans end product of purine catabolism is
 (a) Uric acid (b) Urea (c) Purine oxide (d) Xanthine
125. Which of the following adverse effects is caused by thioridazine
 (a) Tardive dyskinesia (b) Constipation
 (c) Orthostatic hypotension (d) All of the above

ANSWER KEY GPAT 2017

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