GPAT-2023

Pharmaceutics

1. **The addition of Monobasic Potassium Phosphate to the suspended Bismuth Subnitrate particles cause the A to B owing to the C**
   (a) A- negative zeta potential, B-decrease, C- adsorption of the negatively charged phosphate anion
   (b) A-positive zeta potential, B-increase, C- adsorption of the negatively charged phosphate anion
   (c) A-positive zeta potential, B-decrease, C- adsorption of the negatively charged phosphate anion
   (d) A- positive zeta potential, B-decrease, C- adsorption of the positively charged hydrogen anion

2. **Noyes-Whitney equation predicts**
   (a) An increase of dissolution rate if the particle size is reduced by micronization because of an increase in area
   (b) Relationship between the radius of the diffusing molecule and its diffusion coefficient
   (c) The influence of electrolyte on the rate constant
   (d) An equilibrium between the surfactant and the drug molecules at the surface of the solution and in the bulk of the solution

3. **Which type of in-vitro-in-vivo correlation compares % drug released Vs % drug absorbed**
   (a) Level C (b) Level A
   (c) Multiple level C (d) Level B

4. **Ideally BA studies should be carried on volunteers**
   (a) Aged (b) Children
   (c) Healthy (d) Patient

5. **Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R)**
   Assertion (A): In case of Salicylic Acid Ointment BP Wool Alcohol Ointment made with white soft paraffin is used
   Reason (R): Wool Alcohol Ointment made with white soft paraffin is used because the medi cament is coloured In the light of the above statements, choose the most appro priate 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

6. **If S is the solubility of small particles of radius r, is the normal solubility (i.e., of a solid consisting of fairly large particles), is the interfacial energy, M is the molecular weight of the solid, ρ is the density of the bulk solid, R is the gas constant and T is the thermodynamic temperature, then which of the following equation indicates the changes in in terfacial free energy that accompany the dissolution of particles of varying sizes causing the solubility of substance to increase with decreasing particle size**
   (a) Log (S0/S)=2γMr/2.303RTρ
   (b) Log (S/S0)=2γMr/2.303RTρ
   (c) Log (S0/S)=2γMr/2.303RTρr
   (d) Log (S/S0)=2γM/2.303RTρr

7. **Indicate which of the following molecular characteristics will be expected to increase the solubility of a simple solute in an aqueous solution**
   (a) A high melting point
   (b) The presence of polar group
   (c) A high molecular surface area
   (d) A high boiling point

8. **Match List I with List II**

LIST- I Dissolution Apparatus		LIST-II NAME	
1.	Type 1	[P]	Reciprocating holder
2.	Type 5	[Q]	Paddle over disk
3.	USP App 6	[R]	Basket type
4.	USP App 7	[S]	Cylinder apparatus

   Choose the correct answer from the options given below
   (a) 1-[R], 2-[Q], 3-[S], 4-[P]
   (b) 1-[S], 2-[P], 3-[Q], 4-[R]
   (c) 1-[Q], 2-[R], 3-[P], 4-[S]
   (d) 1-[P], 2-[Q], 3-[R], 4-[S]

9. **A clear, sweetened hydroalcoholic liquid containing medicament is known as**
   (a) Elixir (b) Syrup
   (c) Tincture (d) Decoction

10. **Match List I with List II**

List-I Name Of Emulsifier		List – II Remark	
1.	Triethanolamine oleate	[P]	Surface active agent (non-ionic)
2.	N-cethyl N-ethyl morpholinium ethosulfate (Atlas G-263)	[Q]	Hydrophilic colloid
3.	Polyoxyethylene sorbitan mono oleate (Atlas Tween 80)	[R]	Surface- active agent (anionic)
4.	Gelatin	[S]	W/O Emulsifier (HLB= 4.3)
		[T]	Surface active agent (cationic)

(b) Mix the powders using geometric dilution in a motar
(c) Place on an ointment tile and levigate the ingredients using geometric dilution
(d) All of the above

29. EDTA is an example of
(a) Unidentate Ligand (b) Bidentate Ligand
(c) Tridentate Ligand (d) Hexadentate Ligand

30. Efficiency of an reversible engine is given by
(a) Clapeyron equation
(b) Clausius Clapeyron equation
(c) Gibbs-Helmholtz equation
(d) Carnot theorem

31. A sample of glucose was decomposed at 140° C in a solution containing 0·030 M HCl. The velocity constant, k, was found to be 0·0080 hr^{-1}. If the spontaneous rate constant, is 0·0010 hr^{-1} and the catalysis due to hydroxyl ions in this acidic solution is considered as negligible, then the catalytic coefficient, kH is
(a) 0·22 per mole per hour (b) 0·233 per mole per hour
(c) 0·27 per mole per hour (d) 0·29 per mole per hour

32. Which of the following characteristics is most likely to be associated with a high apparent volume of distribution
(a) Penetration across the blood brain and blood testis barriers
(b) Extensive binding to plasma protein
(c) Distribution into total body water
(d) Extensive binding to tissue constituents

33. Which of the following drugs does not bind to haemoglobin
[P] Chlorpromazine [Q] Phenobarbital
[R] Phenothiazine [S] Phenytoin
Choose the most appropriate answer from the options given below
(a) Q, R and S only (b) Q and R only
(c) R and S only (d) P only

34. The more appropriate purpose of spiral scrapper in Swenson-Walker crystallizer is
(a) Agitation of sample (solution)
(b) Conveying the crystals
(c) Prevent an accumulations of crystals on the cooling surface
(d) Provides desired temperature to the sample (solution)

35. If u is velocity of fluid, ρ is density of fluid, L is length of the pipe, D is diameter of the pipe, f is friction factor and ΔP_1 is pressure drop, then the equation $\Delta P_1 = (2f_u{}^2L\rho) \div D$ represents
(a) Hagen-Poiseuille equation (b) Bernoulli equation
(c) Fanning's equation (d) Reynolds equation

36. Schedule 'O' governs the standards for
(a) Disinfectant fluids
(b) List of equipment to run a pharmacy
(c) Life period (expiry) of drugs
(d) Manufacturing and analytical records of drugs

37. The number of persons elected as the member of the Pharmacy Council of India from the teaching profession is
(a) Five (b) Six (c) Seven (d) Eight

38. The fluid flows through the filter medium by virtue of
(a) Pressure difference across the filter
(b) Temperature difference across the filter
(c) Volume difference across the filter
(d) Potential difference across the filter

39. *Specific requirements for manufacture of sterile products and parenteral preparations are prescribed in which of the following part of the Schedule-M [Dropped Question]
(a) PART-IV (b) PART-IB
(c) PART-IC (d) PART-ID

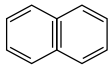
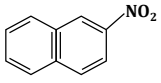
40. *Identify the schedule for which the following cautionary labelling is mandatory as per Drugs and Cosmetics [Dropped Question]
(a) Use within one month of opening
(b) Name and concentration of preservative
(c) Not for injection
(d) If irritation persists or increases, discontinue use and consult physician. Keep container tightly closed

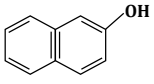
41. Para aminohippuric acid (PAH) clearance test is employed to measure
(a) Renal blood flow (b) Liver blood flow
(c) Cerebral blood flow (d) Venous blood flow

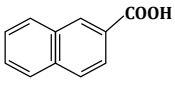
Pharmaceutical Chemistry

42. Alkyl group in Grignard reagent serve as
(a) Carbene (b) Free radical
(c) Aromatic carbocation (d) Carbanion

43. Which of the following compound would be expected to have greatest florescence

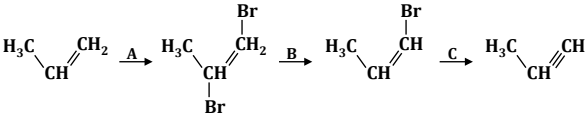
(a) 
(b) 

(c) 

(d) 

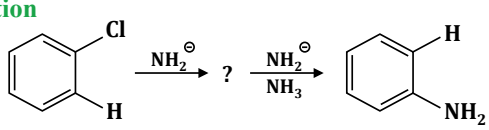
44. Conversion of cyclic ketone to ring expended cyclic ester takes place by
(a) Willgerodt rearrangement
(b) Michael rearrangement
(c) Lossen rearrangement
(d) Baeyer Villiger rearrangement

45. Identify A, B and C in below reaction



(a) A=Br_2, B=KOH, C=$NaNH_2$
(b) A=Br_2, B=HCl, C=$NaNH_2$
(c) A =Br_2, B = HCl, C = $NaBH_4$
(d) A = Br_2, B = KOH, C = $NaBH_4$

46. Identify intermediate forms in following substitution reaction



(a) Cyclohexa-1,3-dien-4-yne
(b) Cyclohexa-1,3-dien-5-yne
(c) Cyclohexa-1,4-dien-5-yne
(d) Cyclohexa-1,5-dien-3-yne

47. Match List I with List II

	List - I Name Of The Drug		List - II Chemical Class
1.	Zolpidem	[P]	Cyclopyrrolone
2.	Zaleplon	[Q]	Benzodiazepine
3.	Zopiclone	[R]	Imidazopyridine
4.	Triazolam	[S]	Pyrazolopyrimidine

Choose the correct answer from the options given below
(a) 1-[S], 2-[R], 3-[Q], 4-[P]
(b) 1-[Q], 2-[S], 3-[R], 4-[P]
(c) 1-[R], 2-[S], 3-[P], 4-[Q]
(d) 1-[P], 2-[R], 3-[S], 4-[Q]

48. Addition of HBr to 1,3-butadiene at 40°C yields
(a) 80% 1,4-addition product and 20% 1,2-addition product
(b) 80% 1,2-addition product and 20% 1,4-addition product
(c) 80% 1,2-addition product and 20% 1,3-addition product
(d) 80% 1,2-addition product and 20% 1,4-addition product

49. Which heterocyclic ring is fused to a steroidal nucleus in Danazol
(a) Thiazole (b) Isoxazole
(c) Imidazole (d) Pyrazole

50. Which of the following factor make carbonyl group in acyl compounds too susceptible to nucleophilic attack
(a) The tendency of oxygen to acquire electrons even at the expense of gaining positive charge
(b) The tendency of oxygen to acquire electrons even at the expense of gaining negative charge
(c) The tendency of carbon to loose electrons even at the expense of gaining negative charge
(d) The tendency of carbon to loose electrons even at the expense of gaining positive charge

51. Phenol reacts with chloroform in presence of aqueous sodium hydroxide to give chief product
(a) 2-Chloro Benzaldehyde
(b) 2-Hydroxy Benzaldehyde
(c) 3-Hydroxy Benzaldehyde
(d) 3-Chloro Benzaldehyde

52. Replacement of the diazonium group by halogen in presence of copper powder is
(a) Sandmeyer reaction
(b) Gattermann reaction
(c) Hofmann reaction
(d) Gabriel reaction

53. Identify pair of C4 epimers
(a) D-glucose and D-galactose
(b) D-glucose and D-fructose
(c) D-glucose and D-mannose
(d) D-glucose and D-xylulose

54. Which is an example of aromatic nucleophilic substitution reaction
(a) Chichibabin (b) Gattermann Koch reaction
(c) Kolbe's reaction (d) Friedel-Crafts reaction

55. Amphetamine undergoes one of the following metabolic reaction to convert to 1- phenyl-2-propanol metabolite via ketone formation
(a) Hydrolysis (b) Oxidation
(c) Reduction (d) Hydroxylation

56. What is the popular common name for a bioactive compound with chemical name of (m-hydroxy phenyl) trimethyl ammonium methyl sulphate dimethyl carbamate
(a) Neostigmine (b) Pyridostigmine
(c) Physostigmine (d) Metastigmine

57. Which among the following Cephalosporins has an unusual 5-thio-1,2,3,4-tetrazole substituent attached to core heterocyclic nucleus through a methylene bridge
(a) Cefazolin (b) Cefamandole
(c) Cefoxitin (d) Cefadroxil

58. Which one of the following molecules has a dipole moment
(a) CS_2 (b) $CHCl_3$ (c) CH_3 (d) CO_2

59. The C-2 epimer of D-glucose is
(a) D-Mannose (b) L-Fructose
(c) D- Glucopyranose (d) L-Arabinose

60. Which of the following is correct order of stability of free radicals
(a) 3°>2°>1°>CH3°>allyl (b) 3°>2°>1°>allyl>CH3°
(c) CH3°>3°>2°>1°>allyl (d) Allyl>3°>2°>1°>CH3°

61. Isoquinoline on treatment with oleum at 90 °C yields majorly
(a) Isoquinoline-3-sulfonic acid
(b) Isoquinoline-5-sulfonic acid
(c) Isoquinoline-6-sulfonic acid
(d) Isoquinoline-7-sulfonic acid

62. Eicosanoids are polyunsaturated fatty acids of___carbons
(a) 30 (b) 25 (c) 15 (d) 20

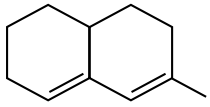
63. Conjugation of a drug includes the following EXCEPT
(a) Glucuronidation
(b) Sulfate formation
(c) Hydrolysis
(d) Methylation

64. The potential of the calomel electrode depends upon
(a) The concentration of potassium chloride solution
(b) Concentration of mercuric chloride
(c) Concentration of mercury
(d) Membrane

65. When exposed to carbon monoxide, the base pigment of Cytochrome P enzymes absorb light at
(a) 450 nm (b) 370 nm
(c) 254 nm (d) 600 nm

66. In atomic absorption spectroscopy, back ground correction performed using a single hol low cathode lamp pulsed first with a low current and then with a high current is called
(a) Smith Hieftje background correction
(b) Continuous source background correction
(c) Zeeman effect background correction
(d) Hollow cathode background correction

67. Predict the theoretical max value for the following compound using Woodward-Fieser rules. Base value for the compound is 215 nm
(a) 240 nm
(b) 220 nm
(c) 225 nm
(d) 235 nm



68. All the following about back titration are true, EXCEPT
(a) It is performed when the rate of reaction between the analyte and reagent is fast
(b) It is performed when the rate of reaction between the analyte and reagent is slow
(c) It is performed when the standard solution lacks stability
(d) It is the process in which excess of standard solution used to react with an analyte is determined by titration with a second standard solution

69. A chromatogram of a peak provided a retention time at 5.4 minutes and 0.41 base width of the peak. The number of plates or the peak obtained is
(a) 210.7 (b) 173 .5 (c) 78.4 (d) 2775.5

70. In UV spectrophotometer, lamp used to generate UV spectrum is
(a) Tungsten (b) Sodium vapor
(c) LED (d) Deuterium

71. Ostwald's dilution law is applicable to
(a) Weak electrolytes (b) Strong electrolytes
(c) Non-electrolytes (d) All electrolytes

Pharmacology

72. Following statement is correct with respect to voltage sensitive calcium channels
(a) L-type Blocker: Nifedipine
(b) T-type Blocker: Verapamil
(c) N-type Blocker: Mibefradil
(d) R-type Blocker: Diltiazem

73. One of the following drugs is not meant for systemic use
(a) Netilmycin (b) Sisomicin
(c) Neomycin (d) Paromomycin

74. Which among the following is not used as NSAID
(a) Indomethacin extended release 75 mg
(b) Aspirin 75 mg
(c) Naproxen 500 mg
(d) Mefenamic acid 500 mg

75. Fight or Flight responses are mediated by
(a) Parasympathetic division of Autonomous nervous system
(b) Sympathetic division of Autonomous nervous system
(c) Serotonergic nervous system
(d) Histaminergic nervous system

76. Which one of the following is an autosomal dominant syndrome in its inheritance
(a) Gilbert's syndrome
(b) Crigler-Najjar syndrome Type-I
(c) Dubin- Johnson syndrome
(d) Rotor syndrome

77. One of the following match is correct choose it
(a) M_1 Acetylcholine receptors confined to brain M_2 Acetylcholine receptors neural M_3 Acetyl choline receptors are cardiac M_4 Acetylcholine receptors glandular
(b) M_1 Acetylcholine receptors neural M_2 Acetylcholine receptors confined to brain M_3 Acetylcho line receptors are cardiac M_4 Acetylcholine receptors glandular
(c) M_1 Acetylcholine receptors neural M_2 Acetylcholine receptors cardiac M_3 Acetylcholine receptors are confined to glandular M_4 Acetylcholine receptors confined to brain
(d) M_1 Acetylcholine receptors glandular M_2 Acetylcholine receptors neural M_3 Acetylcholine receptors are con fined to brain M_4 Acetylcholine receptors cardiac

78. Is a protein marker which can be detected within three hours of acute ischemic kidney injury from patient's urine
(a) N-acetyl- β-D-glucose aminidase
(b) Glutathione-S-transferase
(c) Neutrophil gelatinase associated lipocalin
(d) γ-glutamyl transpeptidase

79. Which of the following genes responsible for graft rejection in humans
(a) Highly polymorphic HLA genes (b) APP genes
(c) hMSH2 gene (d) FMR1 gene

80. Match List I with List II

	List - I		List - II
1.	Vibrations in skeletal muscles of larynx	[P]	Facial contractions
2.	Involuntary contraction of skeletal muscles that is regulated by the brain	[Q]	Regulate voice
3.	Contraction of skeletal muscles in the legs	[R]	Shivering
4.	Pull of skeletal muscles on attachments to skin of face	[S]	Assists return of blood to the heart
		[T]	Causes facial expressions

Choose the correct answer from the options given below
(a) 1-[Q], 2-[R], 3-[S], 4-[P]
(b) 1-[R], 2-[S], 3-[P], 4-[T]
(c) 1-[Q], 2-[R], 3-[S], 4-[T]
(d) 1-[R], 2-[S], 3-[T], 4-[P]

81. Most common type of megaloblastic anemia caused by malabsorption of vitamin B12 and characterized by decreased production of hydrochloric acid in the stomach and a deficiency of intrinsic factor is
(a) Iron deficiency anemia (b) Sideroblastic anemia
(c) Pernicious anemia (d) Aplastic anemia

82. Which of the following is not an ACE inhibitor
(a) Captopril (b) Trandolapril
(c) Verapamil (d) Lisinopril

83. Which of the following combination is correct
(a) Nucleoside reverse transcriptase inhibitors (NRTIs) - Ritonavir
(b) Protease inhibitors - Indinavir
(c) lntegrase inhibitors - Saquinavir
(d) Non-nucleoside reverse transcriptase inhibitors (NNRTIs) - Tenofovir

84. Choose the most appropriate answer
[P] Enterobius vermicularis-Pin worm
[Q] Strongyloides stercoralis-Thread worm
[R] Wuchereria bancrofti-Filarial worm
[S] Dracunculus medinensis-Guinea worm
(a) Only Q and R are correct
(b) Only P and Q are correct
(c) P, Q, R and S are correct
(d) Only Q, R and S are correct

85. Activates G-protein gated potassium channel resulting in membrane hyperpolar ization
(a) α_1 adrenergic receptor (b) α_1 adrenergic receptor
(c) β_1 adrenergic receptor (d) β_2 adrenergic receptor

86. Which among the following statement is correct with respect to their mechanism of an tidiabetic action
(a) Dapagliflozin/Canagliflozin-Sodium glucose cotrans-poti-2 inhibitors
(b) Glipizide/Gliclazide - Dipeptidyl peptidase-4 inhibitors
(c) Linagliptin/Alogliptin -AMPK activators
(d) Acarbose / Voglibose-K^+ATP channel blockers

87. Prominent biochemical features of Grave's disease are
(a) Decreased ionized calcium in body fluids
(b) Decreased T_4 and T_3 in circulation
(c) Increased ionized calcium in body fluids
(d) Increased T_4 and T_3 in circulation

88. Laboratory findings of which one of the following disease include markedly elevated serum amylase levels during the first 24 hours followed by rising serum lipase levels within 72-96 hours
(a) Acute pancreatitis (b) Cirrhosis of liver
(c) Jaundice (d) Cystic fibrosis of lungs

89. Exenatide is a
(a) Glucagon like peptide 1 (GLP 1) receptor agonist
(b) Diphenyl Peptidase-4 (DPP4) inhibitors
(c) Facilitator of glucose transport across the cell
(d) Inhibitor of glucose absorption in the GIT

90 Which of the following is a third generation Cephalosporin
(a) Cefazolin (b) Cefuroxime
(c) Cefotaxime (d) Cefepime

91. Deficiency of_____enzyme is found in Hers' disease
(a) Muscle glycogen phosphorylase
(b) Liver glycogen phosphorylase
(c) Phosphofructokinase
(d) Glucose-6-phosphatase

92. One of the following is correct match or mechanisms. Select it
(a) Methotrexate-Inhibition of microtubules, Vinca alkaloids -Inhibition of Purine synthesis, Bleomycin- Inhi bition of RNA, 5-Fluoro Uracil-DNA damage
(b) Methotrexate-Inhibition of Purine synthesis, Vinca alkaloids -Inhibition of Micro tubules, Bleomycin-DNA damage, 5-Fluoro Uracil-inhibition of 2-deoxythymidylate
(c) Methotrexate-DNA damage, Vinca alkaloids-Inhibition of micro tubules, Bleomycin-Inhi bition of 2-de oxythymidylate. 5-Fluoro Uracil-RNA damage
(d) Methotrexate-DNA damage, Vinca alkaloids-RNA damage, Bleomycin-Inhibition of Purine synthesis, 5-Fluoro Uracil-Inhibition of 2-deoxythymidylate

93. The β- adrenergic antagonist propranolol (20-120 mg/kg) is prescribed to around 50% of maniac patients receiving Lithium is to mitigate the side effect
(a) Anxiety (b) Tremor
(c) Hypertension (d) Bradycardia

94. Which class of antibody opsonizes antigens for phagocytosis through two different path ways
(a) Immunoglobulin G (IgG)
(b) Immunoglobulin M (IgM)
(c) Immunoglobulin A (IgA)
(d) Immunoglobulin E (IgE)

95. Anti-rheumatoid drug which is contraindicated in patients with renal and hepatic impairment
(a) Sulfasalazine (b) Methotrexate
(c) Corticosteroids (d) Azathioprine

96. Which among the following is an amino-alcohol analogue that has weak visceral anticho linergic activity but is a strong nicotinolytic drug
(a) Biperiden (b) Orphenadrine
(c) Poldine (d) Propantheline

97. Which one of the following interferes with the release of cholinergic neurotransmitter, acetylcholine by the neurons of autonomic nervous system
(a) Reserpine (b) Guanethidine
(c) Hemicholinium (d) Botulinum toxin

98. Which one of the following types of hepatitis can lead to fulminant hepatitis causing massive hepatic cell death more frequently among infected pregnant women, showing third trimester mortality as high as 30%
(a) Hepatitis A (b) Hepatitis B
(c) Hepatitis C (d) Hepatitis E

99. Phocomelia is caused by
(a) Glibenclamide
(b) Indapamide
(c) Xipamide
(d) Thalidomide

100. Valproate and Carbamazepine can be used as first line drugs for the management of following type of seizure
(a) Both partial seizure and Tonic-clonic seizure
(b) Both Tonic-clonic seizure and Status epilepticus
(c) Only Febrile seizures
(d) Both Febrile seizures and Status epilepticus

101. Which of the following is not a Sulphonamide derivative
(a) Almotriptan (b) Sumatriptan
(c) Rizatriptan (d) Naratriptan

102. Which phase of cell cycle is the shortest phase in terms of time
(a) G_1 (b) S (c) M (d) G_2

Pharmacognosy

103. The following are adulterants of clove EXCEPT one, choose the most appropriate option
(a) Mother Clove (b) Clove Stalk
(c) Blown Clove (d) Clove Bud

104. Unicellular conical, warty trichomes, paracytic stomata, xylem vessels with annular thick ening are important microscopical features of which plant
(a) Datura metel (b) Cassia angustifolia
(c) Digitalis purpurea (d) Atropa belladonna

105. Sesquiterpenes are biosynthesized from_____in plants
(a) Farnesyl-pyrophosphate
(b) Geranyl farnesyl pyrophosphate
(c) Terpenes
(d) Degraded products of terpenes

106. The alcohol solution of Sudan-III and tincture of alkana are the reagents used for identification of following type of secondary metabolites
(a) Resins (b) Alkaloids
(c) Fixed oils (d) Volatile oils

107. Aloe contains_____type of glycosides
(a) C-glycosides (b) O-glycosides
(c) S-glycosides (d) N-glycosides

108. Ayurvedic fermented preparation includes
(a) Churnas (b) Tailas
(c) Bhasmas (d) Aristas and Asavas

109. Modified borntrager's test is used to detect the presence of which type of glycosides
(a) O-type of glycosides (b) C-type of glycosides
(c) S-type of glycosides (d) N-type of glycosides

100. Terpene indole alkaloid derived from L-Tryptophan via Secologanin is
(a) Morphine (b) Codeine
(c) Ajamalicine (d) Thebaine

111. Chemically volatile oils differ from fixed oils in one of the following characters
(a) Mixtures of eleoptenes and steroptenes
(b) Presence of flavonoids
(c) Presence of plant acids
(d) Hydrophilic in nature

112. Which one of the following drug is skeletal muscle relaxant
(a) Datura stramonium
(b) Atropa belladonna
(c) Hyoscyamus niger
(d) Chondrodendron tomentosum

113. Match the photo pharmaceutical with the plant species from which they are produced

LIST - I Compound		LIST - II Plant Species	
1.	Cardenolides	[P]	Ruta graveolens
2.	Rutin	[Q]	Catharanthus roseus
3.	Ajamalicine	[R]	Papaver simnifera
4.	Codeine	[S]	Digitalis lanata

Choose the correct answer from the options given below
(a) 1-[S], 2-[P], 3-[Q], 4-[R]
(b) 1-[P], 2-[R], 3-[Q], 4-[S]
(c) 1-[R], 2-[P], 3-[Q], 4-[S]
(d) 1-[Q], 2-[S], 3-[P], 4-[R]

Other Subjects

114. Carbohydrates have hydrogen oxygen atom ratio of
(a) 1 : 2 (b) 3 : 1 (c) 1 : 3 (d) 2: 1

115. Autoimmunity refers to
(a) An automatic trigger of the immune system directed against a specific pathogen
(b) Failure to distinguish between self and non-self
(c) An automatic segregation of T and B cells
(d) Failure of B-cells to interact with T-cells

116. Which of the following is acellular
(a) Bacteria (b) Fungus (c) Virus (d) Amoeba

117. Recombination process in a cell occurring through the mediation of phages is called
(a) Transfection (b) Transduction
(c) Conjugation (d) Transformation

118. The Schick test is used to determine susceptibility to
(a) Measles (b) Diphtheria (c) Polio (d) Typhoid

119. Absorption of Vitamin B12 is facilitated by
(a) Hydrogel (b) Glycoprotein
(c) Lipoprotein (d) Mucoprotein

120. Enzyme asparaginase is obtained from
(a) Clostridium histolyticum (b) Bacillus subtilis
(c) Erwinia carotovora (d) Kluyveromyces lactis

121. In 1798 Edward Jenner published his work on
(a) Vaccination (b) Prescription writing
(c) Isolation of morphine (d) Isolation of codeine

122. Modified Lowry's procedure is used to characterize
(a) Protein-Content in allergen product
(b) Protein profile in allergen product
(c) Potency of allergen product
(d) Storage condition of allergen product

123. Match List I with List II

LIST - I		LIST - II	
1.	Penicillin	[P]	Single cell protein
2.	Pruteen	[Q]	Ion exchange chromatography for recovery
3.	Streptomycin	[R]	Primary metabolite
4.	Amino acids	[S]	Phenyl acetic as precursor

Choose the correct answer from the options given below

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

124. Who is the primary source of information for doctors prescribing behaviour

(a) Competitor (b) Wholesaler
(c) Fellow doctor (d) Retailer

125. The good management principle revolves around the three R's these are

(a) Ration, Rotation and Responsibility
(b) Reward, Recognition and Responsibility
(c) Research, Recreation and Responsibility
(d) Reverse engineering, Research and Responsibility

Answer Key

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