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Booklet No.

40421

Booklet Series

QUESTION BOOKLET



PHARMACEUTICAL CHEMISTRY

Subject Code : 04

Time Allowed : 2 Hours

Maximum Marks : 100

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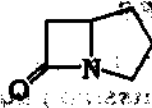
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SEAL

1. 17β -hydroxy, androst-4-ene-3-one is an IUPAC name of

- (A) progesterone
- (B) testosterone
- (C) cortisone
- (D) estrone

2. Identify the ring given below :



- (A) Cepham
- (B) Penam
- (C) Carbapenam
- (D) Carbapenam

3. In the glucuronide conjugation reaction of meprobamate, the functional group responsible is

- (A) hydroxy
- (B) carboxyl
- (C) amide
- (D) thiol

4. Trimethoprim contains

- (A) pyrimidine nucleus and 2,4,6-trimethoxy benzyl substitution
- (B) pyridine nucleus and 2,4,6-trimethoxy benzyl substitution
- (C) pyrimidine nucleus and 3,4,5-trimethoxy benzyl substitution
- (D) pyridine nucleus and 3,4,5-trimethoxy benzyl substitution

5. Mefenamic acid is a derivative of

- (A) aryl propionic acid
- (B) aryl acetic acid
- (C) anthranilic acid
- (D) None of the above

6. Saccharimetry is the practical application of

- (A) potentiometry
- (B) polarimetry
- (C) aquametry
- (D) acidimetry

7. In which of the following titrations, oxidation-reduction (redox) step can be expected?
- (A) Aquametry
 - (B) Cerimetry
 - (C) Gay-Lussac method
 - (D) Kjeldahl titration
8. Assay of calcium gluconate is performed by
- (A) direct titration
 - (B) indirect titration
 - (C) alkalimetric titration
 - (D) replacement titration
9. Oxazepam is a metabolite of
- (A) diazepam
 - (B) temazepam
 - (C) Both (A) and (B)
 - (D) None of the above
10. Antibiotic streptomycin acts by
- (A) inhibition of protein synthesis by binding with 30S ribosomal unit
 - (B) inhibition of protein synthesis by binding with 50S ribosomal unit
 - (C) inhibition of cell wall synthesis
 - (D) inhibition of DNA gyrase
11. Which one of the following is a selective COX-2 inhibitor?
- (A) Piroxicam
 - (B) Valdecoxib
 - (C) Aspirin
 - (D) Thioridazine
12. Because of bitter taste, chloramphenicol is available in which of the following salts for pediatric usage?
- (A) Phosphate
 - (B) Palmitate
 - (C) Hydrochloride
 - (D) Fumarate
13. Which of the following is an example of prodrug?
- (A) Phenothiazine
 - (B) Ibuprofen
 - (C) Enalapril
 - (D) INH
14. Which of the following is anti-metabolite drug having anti-fungal activity?
- (A) Clotrimazole
 - (B) Flucytosine
 - (C) Griseofulvin
 - (D) Terbinafine

15. Stavudine is an example of
- (A) non-nucleoside pyrimidine analogue
 - (B) nucleoside pyrimidine analogue
 - (C) nucleoside pyridine analogue
 - (D) nucleoside deoxypurine analogue
16. Amodiaquine structure is a derivative of
- (A) 4-aminoquinoline with *N*-phenyl substitution
 - (B) 3-aminoquinoline with *N*-phenyl substitution
 - (C) 4-aminoquinoline with pyridazine substitution
 - (D) 3-aminoquinoline with pyridazine substitution
17. Higher the dielectric constant
- (A) lower will be the dissociation of solute
 - (B) higher will be the dissociation of solute
 - (C) ion pairing occurs
 - (D) Both (A) and (C)
18. Oxygen flask combustion method was developed by
- (A) K. Fajan
 - (B) Kjeldahl
 - (C) Schoriger
 - (D) None of the above
19. Which of the following drugs belongs to nitrosourea class?
- (A) Streptozocin
 - (B) Dacarbazine
 - (C) Estramustine
 - (D) Nitazoxanide
20. Which of the following is non-steroidal drug having potent oestrogenic activity?
- (A) *cis*-Diethylstilbestrol
 - (B) *trans*-Diethylstilbestrol
 - (C) Triamcinolone
 - (D) Auranofin
21. The metabolism of diazepam occurs by
- (A) *N*-dealkylation
 - (B) hydroxylation
 - (C) Both (A) and (B)
 - (D) None of the above

22. Which of the following is an antifungal antibiotic?
- (A) Erythromycin
(B) Rifampin
(C) Cycloserine
(D) Natamycin
23. The active metabolite of anti-cancer cyclophosphamide is
- (A) 4-hydroxy cyclophosphamide
(B) N-acetyl cyclophosphamide
(C) N-hydroxy cyclophosphamide
(D) N-hydroxymethyl cyclophosphamide
24. Absolute stereochemistry is represented by
- (A) D and L
(B) d and l
(C) R and S
(D) All of the above
25. Sulphonamide not having anti-diabetic activity is
- (A) tolbutamide
(B) acetohexamide
(C) mafenide
(D) chlorpropamide
26. Duration of action of insulin may be prolonged by
- (A) esterification of amino acid residue
(B) forming complex of insulin with protein
(C) binding with acidic resins
(D) None of the above
27. How many chiral centres are present in steroid nucleus?
- (A) 6
(B) 4
(C) 5
(D) 7
28. A prodrug used in the treatment of parkinsonism is
- (A) levodopa
(B) carbidopa
(C) selegiline
(D) bromocriptine
29. The vitamin administered with isoniazid to minimize its adverse reaction is
- (A) pyridoxine
(B) niacin
(C) thiamine
(D) biotin

30. Antihypertensive agent terazosin contains
- (A) quinazoline and pyran ring
 - (B) quinazoline and piperazine ring
 - (C) quinoline and piperazine ring
 - (D) quinoline and triazole ring
31. Clavulanic acid has a beta lactum ring fused to
- (A) thiadiazole system
 - (B) thiazolidine system
 - (C) oxazolidine system
 - (D) thiazole system
32. Which of the following steroids shows predominant mineralocorticoidal action?
- (A) Dexamethasone
 - (B) Prednisolone
 - (C) Triamcinolone
 - (D) Fludrocortisone
33. Benzodiazepines potentiate the
- (A) binding of proteins to nervous tissue
 - (B) binding of GABA to receptors
 - (C) binding of GABA to carbohydrates
 - (D) binding of GABA to lipids
34. Which antineoplastic agent is metabolized by xanthine oxidase?
- (A) 6-Thioguanine
 - (B) Vincristine
 - (C) 6-Mercaptopurine
 - (D) Doxorubicin
35. An anticholine esterase inhibitor useful in Alzheimer's disease is
- (A) isoproterenol
 - (B) clioquinol
 - (C) donepezil
 - (D) arecoline
36. Correct unit of wave number is
- (A) cm
 - (B) m^{-1}
 - (C) cm^{-1}
 - (D) cm^{-2}

37. Radiations which have enough energy to cause transitions of the outermost electrons are
- (A) UV-visible
 - (B) X-ray
 - (C) IR
 - (D) NMR
38. Which of the following is the bulk property detector?
- (A) Diode array detector
 - (B) UV detector
 - (C) Fluorescence detector
 - (D) Refractive index detector
39. The efficiency of chromatographic column is measured by
- (A) its length
 - (B) HETP
 - (C) number of theoretical plates
 - (D) None of the above
40. Diatomic molecule absorbed in IR region is
- (A) H₂
 - (B) O₂
 - (C) N₂
 - (D) HCl
41. Choose the correct statement for monobasic acids and monoacidic bases.
- (A) Molar and normal solutions are identical in concentration
 - (B) Molar and normal solutions are not identical in concentration
 - (C) Concentration of molar solution is double of normal solution
 - (D) Concentration of normal solution is double of molar solution
42. In the treatment of angina, verapamil acts as
- (A) β -blocker
 - (B) calcium channel blocker
 - (C) vasodilator
 - (D) platelets aggregation inhibitor
43. Naloxone is
- (A) pure opioid antagonist and is *N*-allyl derivative of dihydromorphine
 - (B) pure opioid antagonist and is *N*-allylnormorphine
 - (C) partial opioid antagonist and is *N*-allylnormorphine
 - (D) less active than nalorphine as morphine antagonist

44. Drug not having phenylethylamine moiety is
- (A) amphetamine
 - (B) pheniramine
 - (C) glyburide
 - (D) mescaline
45. Which structural feature is common in atenolol, propranolol and sotalol?
- (A) 1-Methylethyl amino
 - (B) 2-Hydroxyethyl amino
 - (C) 1-Propyl amino
 - (D) None of the above
46. Which of the following is an example of polypeptide antibiotic?
- (A) Neomycin
 - (B) Bacitracin
 - (C) Amikacin
 - (D) Clindamycin
47. Antacid acts
- (A) by decreasing the volume of HCl in stomach
 - (B) by neutralizing the gastric HCl contents
 - (C) through H/K ATPase pump
 - (D) All of the above
48. The Sodium Rose Bengal (I-131) is used in
- (A) study of potassium ion exchange
 - (B) plasma volume determination
 - (C) brain scanning
 - (D) liver function determination
49. Which one of the following is used as systemic alkalizer?
- (A) Sodium chloride
 - (B) Sodium bicarbonate
 - (C) Sodium sulphate
 - (D) Sodium acetate
50. Which of the following is inorganic saline expectorant?
- (A) Ammonium chloride
 - (B) Potassium iodide
 - (C) Potassium guaiacol sulfonate
 - (D) All of the above
51. Uric acid stone formation can be reduced by
- (A) acidification of urine
 - (B) alkalization of urine
 - (C) acidification of serum
 - (D) alkalization of serum

52. Consumption of raw egg can cause deficiency of

- (A) riboflavin
- (B) pyridoxine
- (C) biotin
- (D) cyanocobalamin

53. This makes a compound to act as a central sympathomimetic agent

- (A) Introduction of beta hydroxyl group in phenylethylamine
- (B) Branching with lower alkyl group on alfa carbon of phenylethylamine
- (C) Halogenations of aromatic ring of phenylethylamine
- (D) Methoxy substitution of aromatic ring of phenylethylamine

54. Which one of the following is non-depolarizing neuromuscular blocking agent?

- (A) Succinylcholine chloride
- (B) *d*-Tubocurarine
- (C) Decamethonium
- (D) Scopolamine hydrobromide

55. Which one of the following diuretics is devoid of adverse effects related to sulphamoyl moiety?

- (A) Spironolactone
- (B) Azosemide
- (C) Acetazolamide
- (D) Hydrochlorothiazide

56. The energy is inversely proportional to

- (A) frequency
- (B) wavelength
- (C) Both (A) and (B)
- (D) None of the above

57. Which one of the following parts is used to isolate particular wavelength or range of wavelengths?

- (A) Radiation source
- (B) Detector
- (C) Monochromator
- (D) All of the above

58. Chemical shift is denoted by

- (A) ν
- (B) σ
- (C) η
- (D) δ

59. Which one of the following standard references is used in NMR universally?

- (A) Benzene
- (B) Chloroform
- (C) TMS
- (D) None of the above

60. The mass analyzer separates the sample ions based on their

- (A) mass to charge ratio
- (B) mass to temperature ratio
- (C) mass to velocity ratio
- (D) mass to ions ratio

61. MALDI is

- (A) matrix-assisted lower desorption ionization
- (B) matrix-assisted laser desorption ionization
- (C) mass-assisted laser desorption ionization
- (D) mass-assisted laser design ionization

62. In adsorption chromatography, the stationary phase is

- (A) liquid
- (B) gas
- (C) solid
- (D) All of the above

63. In Van Deemter equation

$$(HETP = A + B/\mu + C\mu)$$

the term A is

- (A) molecular diffusion
- (B) eddy diffusion
- (C) mass transfer
- (D) None of the above

64. Which of the following is not acting as antimetabolite?

- (A) 6-Thioguanine
- (B) 6-Mercaptopurine
- (C) Clofibrate
- (D) Methotrexate

65. Chlorpromazine structure contains which of the following heterocycles?

- (A) Piperazine
- (B) Xanthine
- (C) Phenothiazine
- (D) Thiaziazine

66. Identify the structure given below



- (A) Sulindac
- (B) Nimesulide
- (C) Naproxen
- (D) Benoxinate

67. Starting material for the synthesis of dacarbazine is

- (A) 5-aminoimidazole-4-carboxamide
- (B) 1-(2,4-dichlorobenzoyl-methyl)-imidazole
- (C) 5-hydroxy-3-methylimidazole
- (D) 4-hydroxy-2-carboxylimidazole

68. Clofazimine belongs to a class of

- (A) iminophenazines
- (B) phenothiazines
- (C) pyrimidines
- (D) benzotriazole

69. Ethyl derivative of 1-methyl-4-phenyl piperidine-4-carboxylic acid is

- (A) anthelmintic agent
- (B) narcotic analgesic
- (C) nonsteroidal antiinflammatory agent
- (D) antifungal agent

70. Captopril is the derivative of amino acid

- (A) histidine
- (B) tyrosine
- (C) phenylalanine
- (D) proline

71. 2,6-Dimethylaniline and chloroacetyl chloride are the starting materials for the synthesis of drug

- (A) lidocaine
- (B) benzocaine
- (C) etidocaine
- (D) mepivacaine

72. Resolution is a method to separate

- (A) diastereomers
- (B) enantiomers
- (C) steroidal mixtures
- (D) None of the above

- 73.** Alfentanil is a/an
- (A) synthetic opioid analgesic agent
 - (B) naturally occurring analgesic agent
 - (C) COX-2 inhibitor
 - (D) anilide derivative used as NSAID
- 74.** Which one of the following does not contain piperidine moiety in its structure?
- (A) Mepivacaine
 - (B) Ropivacaine
 - (C) Lidocaine
 - (D) Bupivacaine
- 75.** The phenothiazine derivative used for Parkinson's disease is
- (A) prochlorperazine
 - (B) promethazine
 - (C) ethopropazine
 - (D) chlorpromazine
- 76.** Which one of the following belongs to imidazolidine 2,4-dione class?
- (A) Phenytoin
 - (B) Trimethadione
 - (C) Phensuximide
 - (D) Paramethadione
- 77.** Replacement of oxygen at C-2 of barbituric acid by a sulfur
- (A) increases lipid solubility
 - (B) decreases lipid solubility
 - (C) shows no change in lipid solubility
 - (D) None of the above
- 78.** In the limit test for sulphate, which one of the following is used to prevent supersaturation?
- (A) Barium sulphate
 - (B) Potassium sulphate
 - (C) Alcohol
 - (D) None of the above
- 79.** Which of the following is an oxidizing agent?
- (A) Hydrogen peroxide
 - (B) Potassium permanganate
 - (C) Concentrated nitric acid
 - (D) All of the above

- 80.** Molecule to become IR active in IR spectroscopy
- (A) must show dipole moment
 - (B) must show change in dipole moment
 - (C) must show magnetic moment
 - (D) must show change in magnetic moment
- 81.** Electromagnetic radiation used in NMR spectroscopy is
- (A) microwave
 - (B) radiofrequency wave
 - (C) ultraviolet
 - (D) infrared radiation
- 82.** Which one of the following indicators is used in complexometric titration?
- (A) Methyl orange
 - (B) Murexide
 - (C) Eosin
 - (D) Crystal violet
- 83.** Sulphur containing B-complex vitamin is
- (A) biotin
 - (B) riboflavin
 - (C) niacin
 - (D) pyridoxine
- 84.** Triamcinolone is
- (A) 9 α -fluoro 16 α -hydroxy-prednisolone
 - (B) 9 β -fluoro 16 α -hydroxy-prednisolone
 - (C) 9 α -fluoro 16 β -hydroxy-prednisolone
 - (D) 9 β -fluoro 16 β -hydroxy-prednisolone
- 85.** 2,6-Dimethoxyphenyl penicillin is the IUPAC name of
- (A) ampicillin
 - (B) methicillin
 - (C) amoxicillin
 - (D) carbenicillin
- 86.** In gel permeation chromatography, molecules are separated on the basis of their
- (A) size and shape
 - (B) chemical nature
 - (C) adsorptive properties
 - (D) partition coefficient

87. The amperometric titration is based on the principle of

- (A) diffusion current is proportional to concentration of electroactive species
- (B) diffusion current is proportional to applied potential
- (C) half-wave potential is characteristic of the substance determined
- (D) half-wave potential is proportional to concentration of active species

88. The heterocyclic ring present in nizatidine is

- (A) imidazole
- (B) oxazole
- (C) thiazole
- (D) furan

89. The most intense peak in the mass spectrum is

- (A) mass peak
- (B) metastable peak
- (C) M+1 peak
- (D) base peak

90. Which of the following is a tartar emetic?

- (A) Potassium bitartrate
- (B) Antimony potassium tartrate
- (C) Magnesium tartrate
- (D) None of the above

91. The relationship among concentration, temperature and potential of a solution is given by

- (A) Ilkovic equation
- (B) Henderson equation
- (C) Nernst equation
- (D) Van Warneer equation

92. Tricyclic antidepressant used as antiepileptic is

- (A) carbamazepine
- (B) phenytoin
- (C) valproate
- (D) ethosuximide

93. Limit test for arsenic is performed in which of the following methods?

- (A) Dithizone test
- (B) Gutzeit test
- (C) Arsine test
- (D) None of the above

94. Which one of the following is an unsaturated fatty acid?
- (A) Linoleic acid
(B) Myristic acid
(C) Palmitic acid
(D) Stearic acid
95. SGPT is elevated in
- (A) hepatitis
(B) diabetes
(C) pancreatitis
(D) None of the above
96. Erythromycin belongs to the class of
- (A) macrolide
(B) β -lactum
(C) aminoglycoside
(D) peptide
97. Nifedipine blocks which of the following calcium channels?
- (A) T-type
(B) N-type
(C) P-type
(D) L-type
98. 198 is used in
- (A) the treatment of pernicious anaemia
(B) the detection of tumors
(C) the treatment of rheumatoid arthritis
(D) the detection of thyroid function
99. Dialkyl diethylmalonate when treated with urea in presence of sodium ethoxide gives
- (A) diazepam
(B) morphine
(C) barbiturate
(D) sulfonamide
100. Prostaglandins are a group of related
- (A) alcohols
(B) aldehydes
(C) fatty acids
(D) alkaloids

SPACE FOR ROUGH WORK

SEAL

Q.1. The following are the names of the drugs used in the treatment of malaria. Which one is not used in the treatment of malaria?

(A) Chloroquine (B) Primaquine (C) Mefloquine (D) Quinine

Q.2. The following are the names of the drugs used in the treatment of tuberculosis. Which one is not used in the treatment of tuberculosis?

(A) Isoniazid (B) Rifampin (C) Ethambutol (D) Clofazimine

Q.3. The following are the names of the drugs used in the treatment of leishmaniasis. Which one is not used in the treatment of leishmaniasis?

(A) Antimony (B) Amphotericin B (C) Miltefosin (D) Paromomycin

Q.4. The following are the names of the drugs used in the treatment of schistosomiasis. Which one is not used in the treatment of schistosomiasis?

(A) Praziquantel (B) Mebendazole (C) Albendazole (D) Triclabendazole

Q.5. The following are the names of the drugs used in the treatment of toxoplasmosis. Which one is not used in the treatment of toxoplasmosis?

(A) Pyrimethamine (B) Sulfadiazine (C) Clindamycin (D) Cotrimoxazole

Q.6. The following are the names of the drugs used in the treatment of cryptosporidiosis. Which one is not used in the treatment of cryptosporidiosis?

(A) Nitazoxanide (B) Paromomycin (C) Albendazole (D) Triclabendazole

Q.7. The following are the names of the drugs used in the treatment of giardiasis. Which one is not used in the treatment of giardiasis?

(A) Metronidazole (B) Tinidazole (C) Albendazole (D) Triclabendazole

Q.8. The following are the names of the drugs used in the treatment of amoebiasis. Which one is not used in the treatment of amoebiasis?

(A) Metronidazole (B) Tinidazole (C) Albendazole (D) Triclabendazole

Q.9. The following are the names of the drugs used in the treatment of trichuriasis. Which one is not used in the treatment of trichuriasis?

(A) Mebendazole (B) Albendazole (C) Triclabendazole (D) Thiabendazole

Q.10. The following are the names of the drugs used in the treatment of ascariasis. Which one is not used in the treatment of ascariasis?

(A) Mebendazole (B) Albendazole (C) Triclabendazole (D) Thiabendazole

Q.11. The following are the names of the drugs used in the treatment of hookworm infection. Which one is not used in the treatment of hookworm infection?

(A) Mebendazole (B) Albendazole (C) Triclabendazole (D) Thiabendazole

Q.12. The following are the names of the drugs used in the treatment of strongyloidiasis. Which one is not used in the treatment of strongyloidiasis?

(A) Ivermectin (B) Mebendazole (C) Albendazole (D) Triclabendazole

Q.13. The following are the names of the drugs used in the treatment of trichostrongylosis. Which one is not used in the treatment of trichostrongylosis?

(A) Ivermectin (B) Mebendazole (C) Albendazole (D) Triclabendazole

Q.14. The following are the names of the drugs used in the treatment of ostertosis. Which one is not used in the treatment of ostertosis?

(A) Ivermectin (B) Mebendazole (C) Albendazole (D) Triclabendazole

Q.15. The following are the names of the drugs used in the treatment of trichostrongylosis. Which one is not used in the treatment of trichostrongylosis?

(A) Ivermectin (B) Mebendazole (C) Albendazole (D) Triclabendazole

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