

RAJASTHAN UNIVERSITY OF HEALTH SCIENCES, JAIPUR

DRUG CONTROL OFFICER RECRUITMENT EXAMINATION 2018

Date of Exam: 18<sup>th</sup> May 2018 [09:00 AM to 11:00 AM]

Multiple Choice Question paper & Answer Key

Correct Answer is mentioned in Square Brackets.

1. Nernst equation is generally practice in
- Complexometric titration
  - Potentiometry
  - Polarimetry
  - Non Aqueous titration
- [ b ]
2. Match the following term used for explanation
- |                |   |
|----------------|---|
| P. Red Shift   | 1. Carbonyl group                       |
| Q. Auxochrome  | 2. Increase in wavelength of Absorption |
| R. Chromophore | 3. Amino Group                          |
| S. Blue shift  | 4. Decrease in wavelength of Absorption |
- P-2, Q-1, R-4, S-3
  - P-4, Q-2, R-3, S-1
  - P-3, Q-1, R-2, S-4
  - P-2, Q-3, R-1, S-4
- [ d ]
3. The molar absorptivities for peak associated with excitation to the  $\pi \rightarrow \pi^*$  state generally ranged from
- 1000 to 10000  $\text{L cm}^{-1} \text{mol}^{-1}$
  - 1000 to 500  $\text{L cm}^{-1} \text{mol}^{-1}$
  - 100 to 10  $\text{L cm}^{-1} \text{mol}^{-1}$
  - 200 to 400  $\text{L cm}^{-1} \text{mol}^{-1}$
- [ a ]

4. Which is the correct order of increasing wave number of the stretching vibrations of (1) C-H (alkane), (2) O-H (alcohol), (3) C=O (ketone), and (4) C≡C (alkyne)?
- (4) < (3) < (1) < (2)
  - (4) < (3) < (2) < (1)
  - (3) < (4) < (2) < (1)
  - (3) < (4) < (1) < (2) [ d ]
5. Solochrome black indicator used in which type of titration
- Non aqueous titration
  - Acid base titration
  - Complexometric titration
  - Gravimetric analysis [ c ]
6. Aprotic solvents have
- Basic
  - Acidic
  - No Acidic or Basic
  - Both Acidic and Basic properties [ c ]
7. In Gas Chromatography, Which detector is preferred when analysis of drugs contain halogens?
- FID
  - TCD
  - ECD
  - PID [ c ]
8. The glass electrode used in pH measurement is
- a metal metaloxide electrode
  - Ion selective electrode
  - A membrane electrode
  - Plastic Electrode [ b ]

9. In size exclusion chromatography of a mixture of molecules, which one will elute first?
- The largest molecule
  - The smallest molecule
  - The most polar molecule
  - The most non polar molecule [ a ]
10. Iodine vapours for TLC are used to detect the
- Steroids
  - Carboxylic acids
  - Volatile compound
  - Unsaturated compound [ d ]
11. The drug Bisacodyl is assayed titrant
- 0.1 N NaOH
  - 0.1 N HCl
  - 0.1 M  $N(C_4H_9)_4 OH$
  - 0.1 N  $HClO_4$  [ d ]
12. An example of strongly acidic cation exchange resin is
- Quarternary polymethacrylate
  - Phenol formaldehyde
  - Quaternary Polystyrene
  - Sulphonated polystyrene [ d ]
13. Which method cannot be useful for the bacterial endotoxin test
- Gel Clot test method
  - Kinetic Turbidimetric method
  - Titrimetric method
  - End point Chromogenic method [ c ]

14. Which type of bioassay method are not type of Graded response
- a. Matching point method
  - b. End point method
  - c. Bracketing Method
  - d. Multiple point method [ b ]
15. If the drug is unretained by the stationary phase and elute with the solvent front then Retention factor (k) is
- a.  $K = 0$
  - b.  $K > 20$
  - c. K is between 1 and 20
  - d.  $K > 01$  [ a ]
16. According to pharmacopeia, which microorganism used for Vitamin B12 activity assay?
- a. Pseudomonas Aeruginosa
  - b. Lactobacillus leichmannii
  - c. Staphylococcus cerevisies
  - d. Bacillus subtillis [ b ]
17. Which test organism is used to microbial assay of Tetracycline
- a. Bacillus cereus
  - b. Bacillus Pumilus
  - c. Bacillus subtilis
  - d. Micrococcus luteus [ a ]
18. The gaussian peak having Tailing factor ( $T_f$ ) of
- a.  $T_f = 0$
  - b.  $T_f = 0.5$
  - c.  $T_f = 1$
  - d.  $T_f = 2$  [ c ]

19. Densitometric detection of components can be done in
- HPTLC
  - HPLC
  - UV spectrometry
  - IR Spectroscopy [ a ]
20. For detection of spots of amino acids on a paper chromatogram, the most widely used method is
- U.V. Light
  - Spray with ceric sulphate
  - Spray with ninhydrin
  - Use of radioisotope technique [ c ]
21. Which of the following is opium?
- The dried latex exudates of the unripe incised capsules
  - The dried aqueous extract of the ripe capsules
  - The dried alcoholic extract of the unripe capsules
  - concentrated alcoholic extract of the poppy straw [ a ]
22. Atropine is a 1:1 mixture of D and L-...
- Scopoletin
  - Scopolamine
  - Hyoscyamine
  - Belladonnin [ c ]
23. Which of the following is the common skeleton of physiologically active ergoline alkaloids?
- Clavorubine
  - Isolysergic acid
  - 2-Phenylbenzopyran
  - Lysergic acid [ d ]

24. Which of the following is the reagent for alkaloids?
- a. 2,4-Dinitrophenylhydrazine
  - b. Iron(III)chloride
  - c. Antimony(III)chloride
  - d. Potassium tetra iodomercurate [ d ]
25. Ergotoxine is a mixture of
- a. 2 alkaloids
  - b. 3 alkaloids
  - c. 4 alkaloids
  - d. 6 alkaloids [ b ]
26. Ergot powder gives blue color with
- a. Benzaldehyde
  - b. P-dimethyl aminobenzaldehyde
  - c. Cinnamaldehyde
  - d. Formaldehyde [ b ]
27. Which is not the chemical constituent naturally obtained from Opium?
- a. Morphine
  - b. Codeine
  - c. Narcotine
  - d. Heroine [ d ]
28. Palthe senna is identified with...
- a. Absence of anthraquinone glycoside
  - b. Lamina is denser
  - c. Presence of anthraquinone glycoside
  - d. with tapering apex [ a ]

29. Which is not the biological source of Cinchona?
- a. Cinchona calisaya
  - b. Cinchona officinalis
  - c. Cinchona succirubra
  - d. Cinchona indica [ d ]
30. Clove belongs to following family
- a. Rubiaceae
  - b. Myrtaceae
  - c. Liliaceae
  - d. Rutaceae [ b ]
31. The vitamin essential in tissue culture medium is
- a. Pyridoxine
  - b. Thiamine
  - c. Nicotinic acid
  - d. Inositol [ b ]
32. Trukish opium is commonly known as
- a. Chemist opium
  - b. Druggist opium
  - c. Chinese opium
  - d. Chemist and druggist [ b ]
33. Bara Chandrika is synonym of
- a. Rauwolfia tetraphylla
  - b. Rauwolfia vomitoria
  - c. Rauwolfia serpentina
  - d. Rauwolfia canacens [ a ]

34. Which drug is under the chemical class of indole?
- a. Senna
  - b. Cinnamon
  - c. Rauwolfia
  - d. Belladona [ c ]

35. Vincristine act by which mechanism?
- a. Inhibition of microtubule formation in mitotic spindle
  - b. suppresses the denovo biosynthesis of purines
  - c. inhibiting the production of THF
  - d. Immuno suppressant [ a ]

36. Match the mode of action with antihypertensive drug
- |                                      |               |
|--------------------------------------|---------------|
| P. Block of $\beta$ - adrenoceptors  | 1. Lisinopril |
| Q. ACE inhibition                    | 2. Metoprolol |
| R. Arteriolar vasodilation           | 3. Amlodipine |
| S. Block of $\alpha_1$ adrenoceptors | 4. Doxazocin  |
- a. P-2, Q-3, R-4, S-1
  - b. P-1, Q-2, R-3, S-4
  - c. P-2, Q-1, R-3, S-4
  - d. P-4, Q-1, R-2, S-3 [ c ]

37. Adulterants of *Rauwolfia serpentine* are distinguished on the basis of:
- a. Presence of sclerenchyma
  - b. Absence of sclerenchyma
  - c. Presence of parenchyma
  - d. Absence of parenchyma [ a ]



38. Certain of the cells of the spongy Mesophyll are filled with microphenoidal (sandy) Crystals of calcium oxalate is characteristic of
- a. Rauwolfia serpentina
  - b. Cinchona calisaya
  - c. Cassia acutifolia
  - d. Atropa belladonna [ d ]
39. Which is not the use of Datura?
- a. Anticholinergic
  - b. Mydriatic
  - c. Antiadrenergic
  - d. Control of Motion sickness [ c ]
40. Entire parts of the following drugs are effective, except:
- a. Ergot
  - b. Belladonna
  - c. Clove
  - d. Datura [ c ]
41. If an agonist can produce maximal effects and has high efficacy it's called:
- a. Partial agonist
  - b. Antagonist
  - c. Agonist – Antagonist
  - d. Full agonist [ d ]
42. Which is not the use of ergot?
- a. Oxytocin
  - b. Prevent bb
  - c. Migraine
  - d. Laxative [ d ]

43. Indicate the local anaesthetic, which is ester of para amino benzoic acid:

- a. Procaine
- b. Cocaine
- c. Lidocaine
- d. Mepivacaine [ a ]

44. Which antiepileptic drug acts by inhibiting central effects of excitatory amino acids?

- a. Diazepam
- b. Lamotrigine
- c. Ethosuximide
- d. Topiramate [ b ]

45. Which consideration is not true for phenytoin?

- a. It inhibit calcium channel
- b. Structurally related to the barbiturates
- c. Effective against partial seizure
- d. Effective against generalized seizure [ a ]

46. Which of the following insulin preparation has longest duration of action?

- a. Semilente
- b. Protamine zinc
- c. Lente
- d. Isophane [ b ]

47. Anti-microbial action of penicillin is due to its effect on

- a. Protein synthesis
- b. Cell membrane
- c. Cell wall synthesis
- d. DNA synthesis [ c ]

48. Aminoglycoside inhibit bacterial protein synthesis by binding to
- 30s ribosomal particles
  - Peptidoglycans in cell wall
  - DNA
  - m-RNA
- [ a ]
49. The drug which is potent vanilloid receptor agonist that selectively stimulates nociceptive nerve endings
- Icatibant
  - Papaverine
  - Capsaicin
  - Methadone
- [ c ]
50. Which enzyme is a constitutive enzyme in most tissue and having a house keeping role in the body?
- COX – 1
  - COX – 2
  - 5 – HT
  - 15 – HT
- [ a ]
51. Which anti-inflammatory drug having most common side effect of skin reaction?
- Aspirin
  - Acetaminophen
  - Ibuprofen
  - Mefenamic acid
- [ d ]

52. Match the antiasthmatic drug with their mechanism of action

- |                |  |
|----------------|--|
| P. Salbutamol  | 1. Bronchodilator                                  |
| Q. Oxitropium  | 2. Muscarinic receptor agonist                     |
| R. Zafirlukast | 3. The cysteinyl – leukotriene receptor antagonist |
| S. Loratidine  | 4. Histamine H <sub>1</sub> – receptor agonist     |

- a. P-1, Q-2, R-3, S-4
- b. P-2, Q-3, R-4, S-1
- c. P-3, Q-4, R-1, S-2
- d. P-4, Q-1, R-2, S-3

[ a ]

53. Which drug is non analgesic opiate and used as a cough suppressant?

- a. Dextromethorphan
- b. Cromoglicate
- c. Pholcodine
- d. Glucocorticoids

[ c ]

54. Antileprotic action of Dapsone is due to mainly effect on

- a. Inhibition of folate synthesis
- b. Calcium channel blocker
- c. Phagocytosis
- d. DNA synthesis

[ a ]

55. Which of the following statement is not true for Isoniazide

- a. It inhibit synthesis of mycolic acid
- b. Metabolism involves Acetylation
- c. Used to prevent bronchospasm
- d. It may cuase haemolytic anaemia

[ c ]

56. The cefuroxime drug comes under
- 1<sup>st</sup> Generation compound
  - 2<sup>nd</sup> Generation compound
  - 3<sup>rd</sup> Generation compound
  - 4<sup>th</sup> Generation compound [ b ]

57. Which antimalarial drug is not a blood schizonticidal drug?

- Halofantrine
- Mefloquine
- Primaquine
- Chloroquine [ c ]

58. The absorption of water is under the control of \_\_\_\_\_ hormone.

- vasopressin
- Aldosterone
- Androgen
- glucocorticoid [ a ]

59. Match the mechanism of action of respective vasodilator drug

- |                               |                  |
|-------------------------------|------------------|
| P. Calcium antagonist         | 1. Enalkiren     |
| Q. Activate Potassium channel | 2. Nitroprusside |
| R. Act via cyclic nucleotides | 3. Minoxidil     |
| S. Renin inhibitor            | 4. Verapamil     |

- P-4, Q-1, R-2, S-3
- P-2, Q-3, R-4, S-1
- P-4, Q-3, R-2, S-1
- P-1, Q-2, R-3, S-4 [ c ]

60. Amoebiasis is an infection of

- E. Coli
- Entamoeba histolytica
- Leishmania
- Trypanosoma gambiense [ b ]

61. All of the following statements about the extrapyramidal effect of neuroleptics are correct except
- They are caused by blockage of dopamine receptor
  - They are less likely to be produce by clozapine than by fluphenazine
  - Neuroleptics may cause tardive dyskinesia
  - Haloperidol does not cause extrapyramidal disturbance [ d ]
62. In tablet manufacturing process, Mottling refers to...
- Unequal distribution of color on tablet surface
  - Tablet breaks into two layer
  - Development of cracks in tablet
  - Formation of wings [ a ]
63. Sterility test for molds and yeasts should be conducted with
- Thioglycollate medium
  - Agar plates
  - Honey media
  - Glucose broth [ c ]
64. The oral prolonged drug delivery system release depend upon physical processes EXCEPT
- Permeation of the matrix by water
  - Diffusion of drug from matrix
  - Erosion of matrix
  - Metabolism of drug [ d ]
65. Microencapsulation achieved by
- Membrane permeability
  - Co-acervation phase separation
  - Dissolution of coating
  - Sugar Coating [ b ]

66. Sildenafil is used for treatment of one of the following disorder
- Systolic Hypertension
  - Unstable angina
  - Pulmonary Hypertension
  - Hypertension due to eclampsia [ c ]
67. Cardiac glycosides have the following configuration in the aglycone part of the steroid nucleus:
- 5 $\alpha$ , 14  $\alpha$
  - 5 $\alpha$ , 14 $\beta$
  - 5 $\beta$ , 14 $\alpha$
  - 5 $\beta$ , 14 $\beta$  [ d ]
68. The film type transdermal drug delivery system (TDDS) could have a polymer EXCEPT
- Ethylcellulose
  - Polyvinyl alcohol
  - Poly ethylene glycol
  - Glass substrate [ d ]
69. The size of small Unilamellar Vesicle (SUV) Liposomal spherical structure usually between...
- 20 nm – 100 nm
  - 100 nm – 400 nm
  - 1  $\mu$ m and larger
  - 200 nm – 3  $\mu$ m [ a ]
70. Removal and killing of all microorganism is known as
- Destruction
  - Sterilization
  - Pasteurization
  - Removal [ b ]

71. The efficiency of moist heat sterilization is tested with
- Clostridium botulinum
  - Spores of aerobic bacteria
  - Spores of bacillus stearothermophilus
  - Vegetative cells of Bacillus Stearothermophilus [ c ]
72. Which is called as cold sterilization?
- Autoclave
  - Gamma rays [ b ]
  - Infrared rays
  - UV rays
73. Schedule H of the Drug and Cosmetic Act, 1945 contains
- Antibiotics and Antihistaminic
  - Vaccine and sera
  - Biological and special product [ d ]
  - Drugs to be sold only on the prescription of a registered medical practioner
74. Narcotic drug and Psychotropic Substance Act was passed in the year
- 1945
  - 1950
  - 1985
  - 1986 [ c ]
75. The Pharmacy Act was passed in the year
- 1945
  - 1948
  - 1954
  - 1985 [ b ]



76. The Essential Commodities Act is comes under which department?
- Department of External affairs
  - Department of Consumer affairs
  - Department of finance
  - Export import [ b ]
77. What is the full name of IPDMS?
- Indian Pharmaceutical Development monograph system
  - International pharmaceutical development management system
  - Integrated Pharmaceutical Database management system
  - Institute of Pharmaceutical development management system [ c ]
78. Which route of drug administration is most likely to lead to the first pass effect?
- Sublingual
  - Oral
  - Intravenous
  - Intramuscular [ b ]
79. What is characteristic of the intramuscular route of drug administration?
- Only water solution can be injected
  - Oily solution can be injected
  - Opportunity of hypertonic solution injections
  - The action develops slower, than at oral administration [ b ]
80. When Bioequivalence studies are necessary
- When the new drug is a gas
  - When new drug are to be administered parenterally as aqueous solutions and contain same active substance in the same concentration and the same excipient.
  - When the new drug is a powder for reconstitution as a solution
  - Fixed dose combination products with systemic action [ d ]

81. All the bacteria fix nitrogen except
- a. Cyanobacterial
  - b. E. Coli.
  - c. Azobacter
  - d. Rhizobium [ b ]
82. The principal structural component of the cell wall in bacteria is made up of
- a. Simple protein
  - b. Glycoprotein
  - c. Peptidoglycan polymer
  - d. Complex polysaccharide [ c ]
83. Infected blood products may produce serum hepatitis due to the presence of
- a. Hepatitis A Virus
  - b. Hepatitis B Virus
  - c. Hepatitis C Virus
  - d. Bacteriophage [ b ]
84. The microorganisms that can enter the body only through an injury is
- a. Salmonella typhi
  - b. Clostridium tetani
  - c. Clostridium botulinum
  - d. Streptococcus pyogenes [ b ]
85. Class 1 MHC antigen are present on
- a. All cells of the body
  - b. Only cells of the immune system
  - c. Only on leukocyte
  - d. Only on skin cell [ c ]

86. The test which is useful for the identification of M. Tuberculosis
- a. Haemolysis
  - b. Fermentation with sugar
  - c. Gram staining
  - d. Zeihl-Neelson staining [ d ]
87. Humoral Immune system mediated by
- a. B-Cell of lymphocyte
  - b. T-Cell of lymphocyte
  - c. A-Cell of lymphocyte
  - d. D-Cell of lymphocyte [ a ]
88. The direct ELISA test requires
- a. Known Antibody
  - b. Known Antigen
  - c. Patient Antibody
  - d. Substrate [ b ]
89. Antibiotic therapy can cure which of the following forms of syphilis?
- a. Congenital syphilis
  - b. Secondary syphilis
  - c. Primary syphilis
  - d. Tertiary syphilis [ d ]
90. The single most important laboratory test for determining the virulence of staphylococci
- a. Mannitol fermentation
  - b. The catalase test
  - c. Detection of coagulase
  - d. Detection fo penicillinase [ c ]

91. Effective human vaccines have been produced against
- a. Staphylococcus esculin
  - b. Streptococcus agalactiae
  - c. Streptococcus pyrogenes
  - d. Streptococcus pneumoniae [ d ]
92. Which of the Crude drug is not under the class of organised drug
- a. Lectus
  - b. Flowers
  - c. Fruits
  - d. Gums [ d ]
93. The specific sites on antigen with which antibodies react are called
- a. Isotopes
  - b. Immunogens
  - c. Epitopes
  - d. Carriers [ c ]
94. All of the following enzyme can be seen in viruses EXCEPT
- a. Neuraminidase
  - b. RNA dependent RNA Polymerase
  - c. Collagenase
  - d. Protease [ c ]
95. Which technique currently is used for the sero diagnosis of AIDS?
- a. Radioimmunoassay
  - b. ELISA
  - c. Two dimensional immunoelectrophoresis
  - d. Polymerase chain reaction [ b ]

96. What form of plague is most likely to be transmitted from human to human?

- a. Pneumonic
- b. Typhoidal
- c. Catarrhal
- d. Sylvatic [ a ]

97. Tetanus can be prevented by except

- a. Administration of hyperimmune globulin
- b. Transplacental passage of antitoxin
- c. Injection of tetanus toxoid
- d. Specific anti clostridial chemotherapy [ d ]

98. Resistance to antibiotics is carried on

- a. R factor Plasmid
- b. Flagellum
- c. Slime layer
- d. Sex Pilli [ a ]

99. N<sub>2</sub> fixing bacteria in soil were discovered by

- a. S.N. Winogradsky
- b. John Needham
- c. Waddington
- d. Walter Reed [ a ]

100. Yeast is a

- a. Bacteria
- b. Virus
- c. Fungi
- d. Algae [ c ]