INSTRUCTIONS

1. Immediately after the commencement of the examination, you should check that test booklet
does not have any unprinted or torn or missing pages or items, etc. If so, get it replaced
by a complete test booklet.

2. **Encode clearly the test booklet series A, B, C or D as the case may be in the
appropriate place in the answer-sheet.**

3. Write your Roll Number only in the box provided alongside. Do not write anything else on the Test Booklet.

4. This Test Booklet contains 100 items (questions). Each item comprises four responses (answers). Choose only one response for each item which you consider the best.

5. After the candidate has read each item in the Test Booklet and decided which of the given
responses is correct or the best, he has to mark the circle containing the letter of the
selected response by blackening it completely with Black or Blue ball pen. In the following
example, response “C” is so marked:

   A   B   C   D

6. Do the encoding carefully as given in the illustrations. While encoding your particulars
or marking the answers on answer sheet, you should blacken the circle corresponding to
the choice in full and no part of the circle should be left unfilled. After the response has
been marked in the ANSWER SHEET; no erasing/liquid is allowed.

7. You have to mark all your responses ONLY on the ANSWER SHEET separately given
according to ‘INSTRUCTIONS FOR CANDIDATES’ already supplied to you. Responses
marked on the Test Booklet or in any paper other than the answer sheet shall not be
examined.

8. All items carry equal marks. Attempt all items. Your total marks will depend only on
the number of correct responses marked by you in the Answer Sheet. There will be no
negative marking.

9. Before you proceed to mark responses in the Answer Sheet fill in the particulars in the
front portion of the Answer Sheet as per the instructions sent to you.

10. If a candidate gives more than one answer, it will be treated as a wrong answer even
if one of the given answers happens to be correct.

11. After you have completed the test, hand over the Answer Sheet only, to the Invigilator.
1. In the Drugs and Cosmetics Act and Rules, the Schedule relating to GLP is:
   
   (A) Schedule M  (B) Schedule L1
   
   (C) Schedule M1  (D) Schedule P

2. Which separation technique is suitable for simultaneous analysis of standards and samples in a single run?
   
   (A) HPLC  (B) GC
   
   (C) TLC  (D) UV

3. The following plant bark is used as cardiotonic:
   
   (A) Withania somifera  (B) Terminalia bellerica
   
   (C) Terminalia arjuna  (D) Zingiber

4. The typical dry heat condition employed in the sterilization of pharmaceutical products:
   
   (A) 250°C for 90 min  (B) 180°C for 30 min
   
   (C) 100°C for 60 min  (D) 200°C for 45 min
5. Match the reagent with major composition and select correct answer from the codes given below:

(p) Mayer  (i) Potassium bismuth iodide
(q) Dragendorff's  (ii) Iodine in potassium iodide
(r) Wagner reagent  (iii) Picric acid
(s) Hager reagent  (iv) Potassium mercuric iodide

Codes:

(p) (q) (r) (s)
(A) (iv) (i) (ii) (iii)
(B) (iii) (i) (ii) (iv)
(C) (ii) (i) (iv) (iii)
(D) (i) (iv) (ii) (iii)

6. For USP-content uniformity, out of 10 tablets, 9 tablets may contain X % and not more than Y% of labeled drug content:

(A) X = 75%, Y = 125%  (B) X = 85%, Y = 115%
(C) X = 65%, Y = 135%  (D) X = 95%, Y = 105%
7. Density can be measured by the following apparatus:

(A) Soxhlet extraction  (B) Karl Fischer Titrator

(C) Pycnometer  (D) Distillation

8. The most commonly used carrier gas in gas chromatography:

(A) Hydrogen  (B) Argon

(C) Helium  (D) Neon

9. Moisture content of pharmaceuticals is determined by:

(A) RP-HPLC  (B) GC-FID

(C) Karl Fischer method  (D) None of these

10. All the following are AIDS tests, except:

(A) ELISA  (B) Fuji

(C) RIA  (D) Western’s test
11. In the Drugs and Cosmetics Act and Rules, the Schedule relating to GMP for non-allopathic (AYUS) is:

(A) Schedule M
(B) Schedule T
(C) Schedule S
(D) Schedule M1

12. 0.9% of NaCl is........................with blood plasma.

(A) Hypertonic
(B) Hypotonic
(C) Isotonic
(D) None of these

13. The following carbohydrate is commonly known as invert sugar:

(A) Glucose
(B) Fructose
(C) Lactose
(D) Sucrose

14. USP stands for:

(A) United States Pharmacopoeia
(B) United States National Formulary
(C) United States Pharmacopeia
(D) United States Nations Pharmacopoeia
15. Government Analyst for Ayurvedic, Sidda or Unani drug appointed by Central or State Government under:

(A) Section 20  (B) Section 33F
(C) Section 33G  (D) Section 21

16. Vitamin A is:

(A) Polyisoprenoid compound with β-ionone ring
(B) 6-Hydroxychomane
(C) Benzoquinone derivative
(D) Coenzyme Q10

17. What is the first eluted compound in normal, reversed phase chromatography respectively?

(A) Polar, Non-polar
(B) Polar, Semi-polar
(C) Non-polar, Polar
(D) Semi-polar, Non-polar
18. 1 gram is equal to how many grains?

(A) 30  (B) 15  
(C) 5  (D) 60

19. One tablespoonful is equal to:

(A) 7.5 ml  (B) 10 ml  
(C) 15 ml  (D) 30 ml

20. HPLC peak fronting is mainly caused due to:

(A) Immiscible mobile phase  (B) Column heating  
(C) Sample overloading  (D) All of these

21. All the following are tests for amino acids, except:

(A) Biuret test  (B) Millions reagent test  
(C) Xanthoproteic test  (D) Molish test

22. In GC, derivatization of compounds is mainly for:

(A) Remove impurities  
(B) Enable compound interaction with carrier gas  
(C) Improve thermal stability of compounds  
(D) All the above
23. If the adult dose of a drug is 100 mg, what will be the dose for an infant of 12 month’s old?

(A) 8 mg  (B) 8.33 mg  (C) 5 mg  (D) 7.69 mg

24. ‘DS’ means in a prescription:

(A) Repeat  (B) Twice daily  (C) Double strength  (D) Daily

25. Match the instrument with uses and select correct answer from the codes given below:

(p) Rotary cutter mill  (i) Ointment slurries  (q) Ball mill  (ii) Recycling of paper waste and plastic  (r) Roller mill  (iii) Ophthalmics, parental  (s) Hammer mill  (iv) Extraction of fixed oils

Codes:

(p) (q) (r) (s)

(A) (i) (iii) (iv) (ii)  (B) (i) (ii) (iii) (iv)  (C) (ii) (iii) (iv) (i)  (D) (i) (iv) (iii) (ii)

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26. One kilogram is equal to:

(A) 3.3 pounds  (B) 4.4 pounds  
(C) 2.2 pounds  (D) 3.0 pounds

27. In diet of a diabetic patient, the recommended carbohydrate intake preferably:

(A) Monosaccharides  (B) Disaccharides  
(C) Polysaccharides  (D) All of these

28. Under anaerobic conditions the glycolysis of one mole of glucose yields ............... moles of ATP.

(A) 3  (B) 2  
(C) 6  (D) 30

29. Calcitriol is:

(A) 1, 25-diOH cholecalciferol  
(B) 25-OH-cholecalciferol  
(C) 24, 25-diOH cholecalciferol  
(D) 1-OH-cholecalciferol
30. Biotin is involved in the following reactions:

(A) Deamination  (B) Decarboxylation

(C) Carboxylation  (D) Hydroxylation

31. The sites for gluconeogenesis are:

(A) Skin and Pancreas

(B) Brain and Lung

(C) Kidney and Liver

(D) Lens of eye and Intestine

32. The following is a human dietary essential fatty acid:

(A) Stearic acid  (B) Oleic acid

(C) Linoleic acid  (D) Palmitic acid

33. Insulin action on lipid metabolism:

(A) Decreases lipolysis and increases triglyceride synthesis

(B) Increases lipolysis and decreases triglyceride synthesis

(C) Increases lipolysis and increases triglyceride synthesis

(D) Decreases lipolysis and decreases triglyceride synthesis
34. In a prescription ‘PC’ means:
   (A) After meals  (B) Powdered compound
   (C) Before sleep  (D) Daily

35. ‘AC’ in a prescription means:
   (A) Before rising  (B) Add water
   (C) Shake well  (D) Before meals

36. Match the following trace elements with their uses and select correct answer from the codes given below:

   (p) Zinc
   (q) Iodine
   (r) Ferric ammonium citrate
   (s) Chromium

   (i) Biosynthesis of T3 and T4
   (ii) Decreases total cholesterol
   (iii) Treating iron deficiency
   (iv) Bone development

Codes:

   (p) (q) (r) (s)

   (A) (i) (iv) (iii) (ii)
   (B) (iv) (i) (iii) (ii)
   (C) (ii) (i) (iii) (iv)
   (D) (iv) (iii) (ii) (i)

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37. Match the following dental products with suitable uses and select correct answer from the codes given below:

(p) Sodium fluoride  (i) Astringent and dentin desensitizer

(q) Zinc Chloride  (ii) Preservative for dental caries

(r) Disodium Edetate  (iii) Treatment for lead poisoning

(s) Calcium disodium Edetate  (iv) Chelating agent in metal poisoning

Codes:

(p)  (q)  (r)  (s)

(A)  (iv)  (iii)  (ii)  (i)

(B)  (ii)  (i)  (iv)  (iii)

(C)  (ii)  (i)  (iii)  (iv)

(D)  (i)  (ii)  (iii)  (iv)

38. All the following are essential amino acids, which cannot be made by the human body, except:

(A) Valine  (B) Aspartic acid

(C) Leucine  (D) Isoleucine

D.I.-2016—A  12
39. Match the reagents useful for the following limit tests and select correct answer from the codes given below:

(p) Chlorides  
(q) Sulphates  
(r) Iron  
(s) Heavy metals

(i) Hydrogen sulphide solution  
(ii) Thioglycollic acid  
(iii) Barium chloride  
(iv) Silver nitrate

Codes:

(A) (i) (iv) (ii) (iii)
(B) (iv) (ii) (iii) (i)
(C) (iv) (iii) (ii) (i)
(D) (i) (ii) (iii) (iv)

40. Which neuromuscular blocking agent is contraindicated in patients with glaucoma?

(A) Gallamine  
(B) Pancuronium  
(C) Succinylcholine  
(D) Tubocurarin

41. Which of the agonist would be used for cardiogenic arrest, heart block?

(A) α1-agonist  
(B) α2-agonist  
(C) β1-agonist  
(D) β2-agonist
42. The International Pharmacopoeia is published by:

(A) ICH  (B) EMEA
(C) WHO  (D) UNESCO

43. Match the important side effects of the following drugs and select correct answer from the codes given below:

(p) ACE inhibitors    (i) Hepatotoxicity
(q) Antipsychotics   (ii) Sedation
(r) Sitagliptin       (iii) Dry cough
(s) Anti TB           (iv) Coldness

Codes:

\[(p) \quad (q) \quad (r) \quad (s)\]

(A) (i) (iv) (ii) (iii)
(B) (iii) (ii) (iv) (i)
(C) (ii) (iii) (iv) (i)
(D) (iii) (ii) (i) (iv)

44. What is the reason for peak tailing in HPLC?

(A) Strong interaction of the analyte with mobile phase
(B) Strong interaction of the analyte with stationary phase
(C) No interaction of the analyte with mobile phase
(D) No interaction of the analyte with stationary phase
45. Which of the below detector works on Wheatstone bridge principle?

(A) FID  
(B) UV  
(C) TCD  
(D) Photomultiplier

46. What is the typical vacuum requirement to increase the mean-free path for reproducible fragmentation of molecules in Mass Spectrometry?

(A) $10^{-4} - 10^{-5}$ torr  
(B) $10^{-2} - 10^{-3}$ torr  
(C) $10^{-1} - 10^{-2}$ torr  
(D) $10^{-8} - 10^{-12}$ torr

47. How many drops constitute one tablespoonful?

(A) 125  
(B) 250  
(C) 80  
(D) 500

48. One gallon is equal to:

(A) 5 liters  
(B) 3.78 liters  
(C) 5.5 liters  
(D) 4.97 liters

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49. The Narcotic Drugs and Psychotropic Substances (NDPS) Act, came into effect on:
   (A) 14.11.1985  (B) 16.9.1985
   (C) 15.8.1986  (D) 26.9.1986

50. What does 'BID' in a prescription means?
   (A) Twice daily  (B) After meals
   (C) Five times daily  (D) Four times daily

51. Match the following dryers with uses and select correct answer from the codes given below:
   (p) Tray dryer  (q) Spray dryer
   (r) Fluidized bed dryer  (s) Vacuum dryer
   (i) Larger quantity of thermolabile, hygroscopic material to be dried
   (ii) Sticky, plastic, crude drugs, tablet granules etc
   (iii) Heat sensitive, hygroscopic, drugs contains toxic solvents
   (iv) Drying of granules in the production of tablets.

Codes:

   (p) (q) (r) (s)
   (A) (i) (iv) (iii) (ii)
   (B) (i) (ii) (iii) (iv)
   (C) (i) (iii) (iv) (ii)
   (D) (ii) (i) (iv) (iii)

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52. In Pharmacy, Expired drugs should be stored separately in a locked shelf. Bearing the following label:

(A) "Expired Goods-Not For Sale"
(B) "Expired Drugs"
(C) "OLD drugs-Not For Sale"
(D) "OLD drugs"

53. IPR India Act may be called the:

(A) WHO Act          
(B) Patents Act, 1970
(C) IPR Act, 1970     
(D) Patents Act, 1940

54. Under Indian Patent Act, term of patent from the date of filing is:

(A) 30 years          
(B) 60 years
(C) 20 years          
(D) 10 years

55. The ratio of retention of two adjacent peaks is known as:

(A) Capacity factor 
(B) Separation factor
(C) Retention factor 
(D) HETP
56. The more non-polar bonds (Ex: C – C, C = C) will give rise to the strongest bonds in which Spectrum?

(A) VIS  (B) UV

(C) Raman  (D) IR

57. Match the following sodium salts with pharmaceutical uses and select correct answer from the codes given below:

(p) Sodium thiosulphate  (i) Antidote of cyanide

(q) Sodium benzoate  (ii) Powerful reducing agent

(r) Sodium bromide  (iii) Fungistatic and diagnostic agent

(s) Sodium metabisulphite  (iv) As a sedative

Codes:

(p) (q) (r) (s)

(A) (ii) (i) (iv) (iii)

(B) (i) (iii) (ii) (iv)

(C) (i) (iv) (iii) (ii)

(D) (i) (iii) (iv) (ii)

D.I.-2016—A  18
58. SSRI:
   (A) Phenytoin   (B) Sertraline
   (C) Serotonin   (D) Phenobarbital

59. Anticancer drug belongs to inorganic metal complex:
   (A) Dacarbazine   (B) Methotrexate
   (C) Cisplatin     (D) Vincristine

60. The drug used for malaria chemoprophylaxis and treatment:
   (A) Quinidine     (B) Quinine
   (C) Chloroquine   (D) Sulfonamides

61. Tetracycline hydrochloride is never advised to be taken with milk, because

   Tetracycline is inactivated by...........................present in the milk.

   (A) Magnesium     (B) Potassium
   (C) Calcium       (D) Iron
62. NSAID:

(A) Ramipril                (B) Telmisartan
(C) Celecoxib               (D) Diazepam

63. A sample of paracetamol tablets claim to have 500 mg of paracetamol. But after analysis by Govt. analyst, it was found to contain 200 mg. As per Drugs and Cosmetics Act, this product would be categorized as:

(A) Adulterated drug        (B) Misbranded drug
(C) Spurious drug           (D) Unethical drug

64. An inorganic ion which is prophylactically used in bipolar depression is:

(A) Chromium                (B) Lithium
(C) Valproate               (D) Valium
65. Which of the following ACE inhibitors is not a prodrug?

(A) Benzepril   
(B) Captopril

(C) Quinapril   
(D) Ramipril

66. Sulfonamides:

(A) Antibiotics

(B) Bacteriostatics

(C) Bactericidal

(D) Antiviral

67. The following ayurvedic plant leaves and roots used for hair growth tonic:

(A) Aloe vera   
(B) Saraca indica

(C) Curcuma longa   
(D) Eclipta alba

D.I.-2016—A  21

P.T.O.
68. Which water is used for hand washing in a change room of manufacturing unit?

(A) Soap water  (B) Distilled water

(C) Deionized water  (D) Potable water

69. The following Schedules include shelf life of drugs?

(A) Schedule F  (B) Schedule M

(C) Schedule G  (D) Schedule P

70. IR absorption of ester carbonyl group:

(A) 3590 cm\(^{-1}\)  (B) 1700 cm\(^{-1}\)

(C) 1735 cm\(^{-1}\)  (D) 3030 cm\(^{-1}\)
71. IR absorption of hydroxyl group of alcohol:

(A) 3590 cm\(^{-1}\)  
(B) 1700 cm\(^{-1}\)

(C) 2500 cm\(^{-1}\)  
(D) 1200 cm\(^{-1}\)

72. Acetonitrile UV cut-off wavelength:

(A) 215 nm  
(B) 190 nm

(C) 210 nm  
(D) 240 nm

73. Ionizing agent in MALDI:

(A) Electrons

(B) Laser beam

(C) High temperature

(D) Reagent gaseous ions
74. No. of protons present in TMS is:

(A) 10   (B) 4

(C) 12   (D) 9

75. The most intense peak in mass spectrum is known as:

(A) M + 1 Peak   (B) M + 2 Peak

(C) Base Peak   (D) Molecular ion peak

76. Major pharmacological action of Ephedrine:

(A) Kidney failure

(B) Anti-inflammatory

(C) Heart failure

(D) Bronchial asthma

D.I.-2016—A  24
77. The concentration of lead in a water sample is reported as 5 ppm. Express the concentration in percentage:

(A) 0.00005%  (B) 0.005%
(C) 0.05%      (D) 0.0005%

78. In gas chromatography which detector is most sensitive to halogenated compounds:

(A) TCD  (B) FID
(C) ECD  (D) NPD

79. The speed regulating device of the dissolution apparatus should be capable of maintaining the speed within the................. of limits (USP) of selected speed.

(A) ± 10%  (B) ± 3%
(C) ± 4%    (D) ± 5%
80. Which of the following mass analyzers have a wide mass range and can be very accurate in their mass measurements?

(A) Time-of-flight  (B) Ion trap

(C) Quadrupole  (D) Both (A) and (C)

81. Who was the first European to draw attention to the history of the Western Himalayas?

(A) Francois Bernier

(B) Thomas Coryat

(C) Alexander Cunningham

(D) Vigne

82. What was the title of Thakurs of the families of Tibetan origin who held Lahul as Jagir?

(A) Po  (B) Jo

(C) Tso  (D) Ko

D.I.-2016—A  26
83. When was the capital of Chamba princely state shifted from Brahmapura to Chamba?

(A) 8th Century  (B) 9th Century

(C) 10th Century  (D) 11th Century

84. In which district of H.P. is Dera Sidh Baba Rudru?

(A) Hamirpur  (B) Kangra

(C) Una  (D) Bilaspur

85. Which mountain pass joins Kinnaur and Tibet?

(A) Shipki  (B) Hamtah

(C) Jalsu  (D) Dulchi
86. In which district of H.P. is Mantilai lake?

(A) Kinnaur    (B) Chamba
(C) Kullu      (D) Shimla

87. In which District of H.P. is Lipa Asrang sanctuary?

(A) Chamba    (B) Sirmaur
(C) Una       (D) Kinnaur

88. In which river basin is Gaj hydro-power project?

(A) Yamuna    (B) Beas
(C) Ravi      (D) Satluj

89. Which princely state was the epicentre of ‘Bhai Do Na Pai Do’ movement?

(A) Kehlur    (B) Bushahr
(C) Sirmaur   (D) Mandi
90. According to 2015-16 Economic Survey how many services have been covered under Service Guarantee Act in H.P.?

(A) 76

(B) 86

(C) 96

(D) 106

91. When was ‘Make in India’ campaign launched?

(A) September 2014

(B) October 2014

(C) September 2015

(D) None of the above

92. In which district of Kerala is Puttningal Devi temple?

(A) Kottayam

(B) Kannaur

(C) Kollam

(D) None of these
93. With which of the following is Deepa Karmakar associated?

(A) Boxing  (B) Wrestling

(C) Gymnastics  (D) Hockey

94. To which political party does Mehbooba Mufti, the first woman CM of J and K, belong?

(A) BJD  (B) RJD

(C) JDU  (D) PDP

95. On the bank of which river is Ujjain?

(A) Saryu  (B) Kosi

(C) Kshipra  (D) Chambal

96. Who was declared the Man of the Series in the ICC World Twenty 20 Series held in 2016?

(A) Marlon Samuels  (B) Virat Kohli

(C) Ross Taylor  (D) A B de-Villiers

D.I.-2016—A  30
97. Support of approximately how many delegates is needed to get Democratic Party nomination in the US Presidential Elections 2016?

(A) 2383  (B) 3238

(C) 3467  (D) 4763

98. Which day is observed as Tiananmen Square Day?

(A) January 16  (B) February 21

(C) May 01  (D) June 02

99. Which Muslim boy was arrested in the United States for possessing a clock which looked like a bomb?

(A) Muhammad Afzal  (B) Shabir Qureshi

(C) Ahmed Mohamed  (D) Hamid Mohamed

100. Which country in Central America has no coastline on the north Pacific Ocean?

(A) Honduras  (B) Nicaragua

(C) Belize  (D) Guatemala