

BOOKLET NO.

088

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

TBC : AKG-PHARMACOGNOSY-17

Time Allowed : 2 Hours]

[Maximum Marks : 100

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS 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. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. **DO NOT** write **anything** else on the Test Booklet.
3. This Test Booklet contains 100 items (questions). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
4. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. No erasing/correction fluid is allowed.
5. All items carry equal marks.
6. Before you proceed to mark in the Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your Admission Certificate.
7. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the Invigilator **only the Answer Sheet**. You are permitted to take away with you the Test Booklet.
8. Sheets for rough work are appended in the Test Booklet at the end.
9. **Penalty for wrong answers :**
THERE WILL BE PENALTY (NEGATIVE MARKING) FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.
 - (i) There are four alternatives for the answers to every question. For each question for which a wrong answer has been given by the candidate, **one-fourth (0.25)** of the marks assigned to that question will be deducted as penalty.
 - (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answer happen to be correct and there will be same penalty as above for that question.
 - (iii) If a question is left blank i.e. no answer is given by the candidate, there will be **no penalty** for that question.
10. Use and carrying of Mobile Phone and Electronic Gadget is prohibited in the Examination Hall.

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1. Stratified cork and forked fibers are the characteristic diagnostic features of :
 - (A) Apocynaceae
 - (B) Scrophulariaceae
 - (C) Gentianaceae
 - (D) Polygonaceae
2. Anisocytic type of stomata are found in the leaves of :
 - (A) Fox glove
 - (B) *Urginea maritima*
 - (C) *Cassia acutifolia*
 - (D) *Atropa belladonna*
3. In WHO guidelines for the herbal drugs, contaminants include :
 - (A) Purines and pyrimidines bases
 - (B) Amino acids
 - (C) Pentoses
 - (D) Pesticidal residues, arsenic heavy metals, microbial load
4. The quantitative values determined for the identification of leaf drugs remain constant throughout the age of the plant, *except* :
 - (A) Stomatal number
 - (B) Vein-islet termination number
 - (C) Vein-islet number
 - (D) Stomatal index
5. Phloroglucinol and hydrochloric acid produces pink or red color with :
 - (A) Cellulose cell walls
 - (B) Lignified cell walls
 - (C) Cutinized cell walls
 - (D) Mucilaginous cell walls
6. Hybridoma technology is used for producing :
 - (A) Callus cultures
 - (B) Organ cultures
 - (C) Monoclonal antibodies
 - (D) Attenuated microorganisms

7. The most effective methods for producing virus free plants is :
- (A) Root culture
 - (B) Meristem culture
 - (C) Somatic embryogenesis
 - (D) Floriculture
8. It is possible to initiate the development of complete plants from callus cell cultures by suitable manipulation of medium with respect to :
- (A) Minerals
 - (B) Vitamins
 - (C) Carbohydrates
 - (D) Hormones
9. The plant hormones which produces specific effect on the cell division :
- (A) Auxin
 - (B) Abscisic acid
 - (C) Cytokinins
 - (D) Ethylene
10. Lycopodium spore method can be used to find out the percentage purity of the crude drugs which contains :
- (A) Multilayer tissues or cells
 - (B) Well defined particles which can be counted
 - (C) Oil globules
 - (D) Characteristic particles of irregular thickness, the length of which can be measured

11. D-Fructose on simple reduction gives :

- (A) Only mannitol
- (B) Only sorbitol
- (C) L-Fructose
- (D) Mixture of mannitol and sorbitol

12. The gummy nature of *Astragalus gummifer* is dependent on :

- (A) More of methoxyl groups of Bassorin
- (B) The carbohydrates content
- (C) More of the hydroxyl groups of the sugar moiety
- (D) More of the protein content of the drug

13. A transverse section of the root of *Glycyrrhiza glabra* when treated with 80% sulphuric acid gave :

- (A) Deep yellow color
- (B) No reaction but only charring
- (C) Deep blue colour
- (D) Deep red colour

14. Glycyrrhizin a sweet principle of liquorice is :

- (A) K and Mg salts of glycyrrhizinic acid
- (B) Na and Mg salts of glycyrrhetic acid
- (C) K and Ca salts of glycyrrhizinic acid
- (D) Na and Ca salts of glycyrrhetic acid

15. In case of *Digitalis purpurea* the cardiac activity is maximum with :
- (A) Odoroside-H
 - (B) Digoxin
 - (C) Digitoxin
 - (D) Purpurea glycoside A
16. Cascaroside A is an example of :
- (A) O-Glycoside
 - (B) C-Glycoside
 - (C) N- and S-Glycoside
 - (D) O- and C-Glycoside
17. The extraction of steroidal saponins on the commercial scale is from :
- (A) Dioscorea
 - (B) Digitalis
 - (C) Datura
 - (D) Trigonella
18. Borntrager's test is performed for the identification of :
- (A) Digitoxin
 - (B) Reserpine
 - (C) Digoxin
 - (D) Dianthrone of rhein
19. Diosgenin is :
- (A) An alkaloid obtained from dioscorea
 - (B) A carbohydrate obtained from dioscorea
 - (C) An glycoside obtained from dioscorea
 - (D) None of the above

20. Powdered digitalis is dried at a temperature :
- (A) Not exceeding 60 degree C
 - (B) 65 degree C
 - (C) 75 degree C
 - (D) 100 degree C
21. Indian (Tinnevelly) and African Senna differ from each other with respect to :
- (A) Vein islet number
 - (B) Stomatal index
 - (C) Colour
 - (D) All of the above
22. *Ephedra sinica* and *Ephedra equisetina* can be distinguished by-
- (A) Branching
 - (B) Stomata
 - (C) Scaly leaves
 - (D) Alkaloids
23. Meconic acid is chemical marker for which of the following genus ?
- (A) Piper
 - (B) Pilocarpus
 - (C) Prunus
 - (D) Papaver
24. At present different species of Papaver such as *P. bracteatum* and *P. orientale* are being cultivated instead of *P. somniferum* because they contain :
- (A) More of morphine
 - (B) Less of morphine
 - (C) Only codeine
 - (D) Only thebaine

25. Precursor for the biosynthesis of tropane alkaloid is :
- (A) Leucine
 - (B) Lysine
 - (C) Ornithine
 - (D) Tyrosine
26. The opium alkaloids in *Papaver somniferum* is present as one of the following. Identify :
- (A) Free alkaloids
 - (B) As salts of citric acid
 - (C) As salts of meconic acid
 - (D) None of the above
27. Ergot is the sclerotium of :
- (A) *Fungus claviceps purpurea*
 - (B) *Fungus claviceps notatum*
 - (C) *Strychnos mixpotatorum*
 - (D) *Fungus penicillium chrysogenum*
28. Ehrlich's reagent is :
- (A) Bismuth iodide solution
 - (B) *p*-Dimethyl aniline solution
 - (C) *p*-Dimethyl amino benzaldehyde solution
 - (D) *p*-Dimethyl aniline solution in methanol
29. Reserpine on hydrolysis gives :
- (A) Reserpic acid + Trimethoxy cinnamic acid + methyl alcohol
 - (B) Reserpic acid + Trimethoxybenzaldehyde + acetic acid
 - (C) Reserpic acid + Trimethoxy benzoic acid + methyl alcohol
 - (D) Reserpic acid + Trimethoxy cinnamaldehyde + methyl alcohol

30. Alkaloids in cinchona bark are detected by which of the following test :
- (A) Iodine test
 - (B) Thalleioquin test
 - (C) Liebermann-Burchard test
 - (D) Nessler's test
31. Morphine is present in :
- (A) *Atropa belladonna*
 - (B) *Papaver somniferum*
 - (C) *Ricinus communis*
 - (D) *Solanum nigrum*
32. Wagner's test is used to detect the presence of :
- (A) Steroids
 - (B) Alkaloids
 - (C) Glycosides
 - (D) Terpenes
33. Volatile oil from lemon peels contains *d*-limonene which is :
- (A) Phenyl propane derivative
 - (B) Bicyclic monoterpene derivative
 - (C) Monocyclic monoterpene derivative
 - (D) Acyclic sesquiterpene derivative
34. The principal constituent Anethole (50-60%) and Fenchone (18-20%) is present in the volatile oil obtained from :
- (A) Fruits of *Amni visnaga*-Linn
 - (B) Fruits of *Foeniculum capillaceum*-G
 - (C) Fruits of *Carum Carvi*-Linn
 - (D) Fruits of *Anethum graveolens*-Linn

35. Fruits which are derived from the plants Umbelliferae are all of the type :

- (A) Cremocarp
- (B) Pericarp
- (C) Epicarp
- (D) Mesocarp

36. A novel diterpenoid isolated from the bark of *Taxus brevifolia* is :

- (A) Demeclocine
- (B) Paclitaxel
- (C) Vinblastin
- (D) Brevifolicin

37. The substance present in the mace of *Myristica fragrans* which produces a red colour with iodine is :

- (A) Myristicin
- (B) Safrrole
- (C) Elicimicin
- (D) Amylodextrin

38. When an air dried latex is dissolved in water and treated with ferric chloride solution—a red colour develops. The sample is of :

- (A) *Parthenium argentatum*
- (B) *Papaver somniferum*
- (C) *Tolu balsam*
- (D) *Saim benzoin*

39. Belladonna roots contain
calcium oxalate crystal.
- (A) Acicular
 - (B) Microsphenoid
 - (C) Needle shaped
 - (D) Raphides
40. Morphine is soluble in aqueous sodium hydroxide because :
- (A) It has phenolic and alcoholic OH
 - (B) It has tertiary nitrogen
 - (C) It has ether bridge
 - (D) It has alicyclic double bond
41. In the assay of alkaloids, the final residue is treated with little before it is finally dissolved in acid and titrated.
- (A) Base
 - (B) Ether
 - (C) Alcohol
 - (D) Water
42. Source of Indian squill is :
- (A) *Urginea maritima*
 - (B) *Urginea indica*
 - (C) *U. maritima var. pancratium*
 - (D) None of the above
43. is the adulterant of Belladonna.
- (A) *Atropa accuminata*
 - (B) *Atropa baetica*
 - (C) *Phytolacca dacandra*
 - (D) *Hyoscyamus reticulatus*
44. What is the difference between hyoscyamine and atropine ?
- (A) Hyoscyamine is the epoxide of atropine
 - (B) Hyoscyamine is pure optical isomer of atropine
 - (C) Atropine is pure optical isomer of atropine
 - (D) Hyoscyamine and atropine are diastereoisomers

45. What is the biological source of clove ?
- (A) *Caryophyllus armaticus*
- (B) *Eugenia aromatica* and *Eugenia caryophyllata*
- (C) *Syzygium aromaticum*
- (D) All of the above
46. Principal constituents of the ipecacuanha, emetine, cephaline and congeners of each others. What is true about them ?
- (A) Emetine is methyl derivative of cephalin
- (B) Cephalin is methyl derivative of emetine
- (C) Reduction of emetine gives cephalin
- (D) Reduction of cephaline gives emetine
47. Which of the following alkaloids are found as salts of meconic acid ?
- (A) Ergot alkaloids
- (B) Rauwolfia alkaloids
- (C) Tropane alkaloids
- (D) Opium alkaloids
48. Indian belladonna is :
- (A) *Atropa belladonna*
- (B) *Atropa belladonna* var *acuminata*
- (C) *Atropa fastusa*
- (D) *Atropa succirubra*
49. Umbelliferous fruits are :
- (A) Schizocarp
- (B) Pericarp
- (C) Endocarp
- (D) Mesocarp

50. Cascara bark to be used as drug is collected one year before use because :

- (A) Fresh bark contains anthranol derivatives which have emetic and griping action
- (B) Storing for one year oxidizes anthranol to less irritant anthraquinone derivatives
- (C) Both (A) and (B)
- (D) None of the above

51. Bavchi consists of dried ripe fruits of :

- (A) *Prunus amygdalus*
- (B) *Ammi visnaga*
- (C) *Psoralea corylifolia*
- (D) *Picrorhiza kurroa*

52. For isolation of protoplasts from bacterial cell following enzyme is used :

- (A) Pectinase
- (B) Chitinase
- (C) Cellulase
- (D) Lysozyme

53. The methods used for isolation of essential oil include :

- (A) Expression method
- (B) Steam distillation
- (C) Enflurage
- (D) All of the above

54. Which of the following ring system is present in bioflavanoids ?
- (A) Anthraquinone
 - (B) Steroidal
 - (C) Indole
 - (D) Phenylchromane
55. Isothiocyanate glycosides are :
- (A) also known as glucosinolates
 - (B) S-glycosides
 - (C) Found only in dicot plants
 - (D) All of the above
56. Tropane ring is composed of :
- (A) Imidazole and pyridine ring
 - (B) Pyrrolidine and piperidine ring
 - (C) Pyrolidine and piperazine ring
 - (D) Imidazole and indole ring
57. Ephedra consists of of *Ephedra sinica*.
- (A) Dried latex
 - (B) Dried aerial parts
 - (C) Dried roots
 - (D) Dried leaves
58. Indian colchicum is :
- (A) *Colchicum autumnale*
 - (B) *Colchicum album*
 - (C) *Colchicum luteum*
 - (D) *Colchicum secundum*
59. Coumarin present in cassia oil, when treated with alkali shows a :
- (A) Red fluorescence
 - (B) Deep blue fluorescence
 - (C) Green-blue fluorescence
 - (D) Green fluorescence

60. Physiological "ash" represents :

- (A) Water soluble material
- (B) Material derived from the plant itself
- (C) Sand and siliceous earth
- (D) All of the above

61. The amount of alkaloids present in

Rauwolfia ranges between :

- (A) 0.5—1.5%
- (B) 0.5—2%
- (C) 0.7—2.4%
- (D) 0.7—3.5%

62. Ergot is produced during :

- (A) Honeydew stage
- (B) Sclerotium stage
- (C) Ascospore
- (D) Sphaecelia stage

63. Ergotoxine is a mixture of :

- (A) 2 alkaloids
- (B) 3 alkaloids
- (C) 4 alkaloids
- (D) 6 alkaloids

64. Opium belongs to the chemical class of :

- (A) Indole alkaloids
- (B) Quinoline alkaloids
- (C) Isoquinoline alkaloids
- (D) Tropane alkaloids

65. is used as cryoprotectant in cryopreserved tissue culture.

- (A) Auxin
- (B) Vitamin-B₆
- (C) Liquid nitrogen
- (D) DMSO

66. Schizolysigenous oil glands are present in :

- (A) Petal
- (B) Style
- (C) Hypanthium
- (D) Crown

67. The ginsenosides have been described and designated according to their :

- (A) Activity
- (B) Ash value
- (C) R_f value
- (D) Uses

68. Clove oil is used for temporary filling of dental cavities, along with :

- (A) Zinc oxide
- (B) Potassium hydroxide
- (C) Potassium iodide
- (D) Sodium chloride

69. Ginseng belongs to the chemical

class of :

(A) Alkaloids

(B) Glycosides

(C) Saponins

(D) Volatile oils

70. All of the following contains indole

moiety, *except* :

(A) Strychnine

(B) Reserpine

(C) Physostigmine

(D) Atropine

71. C-24 glycosides shows the following test :

(A) Baljet test

(B) Legal test

(C) Liberman's sterol test

(D) All of the above

72. Glandular hair having a unicellular

or occasionally a short uniseriate

pedicel with a unicellular or

bicellular terminal gland is

characteristic of :

(A) Senna leaves

(B) Belladonna leaves

(C) *Datura stramonium* leaves

(D) *Digitalis purpurea* leaves

73. More of earthy matter in a rhizome is determined by :

- (A) Total ash value
- (B) The earthy material is separated and then weighed
- (C) The rhizome is washed in water and then in Hydrochloric acid finally it is weighed
- (D) Acid insoluble ash value

74. Microscopy of the bulb of *Urginea indica* Family Liliaceae shows :

- (A) Prisms of calcium oxalate
- (B) Calcium carbonate and silica
- (C) Rosettes of calcium oxalate
- (D) Raphides of calcium oxalate

75. The characteristic odour of onion bulbs is attributed to :

- (A) Quercetin Glycosides
- (B) Furostanol Glycosides
- (C) Heterogenous sulphated polysaccharides
- (D) Alkyl or alkenyl disulphides

76. Senna leaf IP consists of :

- (A) Dried leaflets of *Cassia acutifolia* and *Cassia augustifolia*
- (B) Dried leaflets of *Cassia indica*
- (C) Dried leaflets of *Cassia carpinifolia*
- (D) Dried leaflets of *Cassia acutifolia* and *Cassia carpinifolia*

77. Colchicine is biogenetically derived from which of the following :

- (A) Tyrosine and phenylalanine
- (B) Tryptophan and phenylalanine
- (C) Ornithine and tryptophan
- (D) Ornithine and phenylalanine

78. Dragendroff's reagent does not give a positive test with :

- (A) Emetine
- (B) Morphine
- (C) Caffeine
- (D) Codeine

79. Reserpine is derived from :

- (A) Squalene
- (B) Homoserine
- (C) Tryptophan and tryptamine
- (D) Asparagine

80. Which *one* of the following is *true* for alkaloid bases ?

- (A) Water solubility and organic solvent insolubility
- (B) Water insolubility and organic solvent insolubility
- (C) Water solubility and organic solvent solubility
- (D) Water insolubility and organic solvent solubility

81. Who presides over the joint sitting of the (Rajya Sabha and Lok Sabha) Parliament ?

- (A) Speaker of Lok Sabha
- (B) P.M. of India
- (C) Vice-President of India
- (D) President of India

82. Which one of the following is the India's first indigenous aircraft carrier ?

- (A) INS Vishal
- (B) INS Virat
- (C) INS Viram
- (D) INS Vikrant

83. NASA's first mission capable of finding earth size and smaller planets around other stars is :

- (A) Wessler
- (B) Toronto
- (C) Target
- (D) Kepler

84. Queen's Proclamation was declared in :

- (A) 1852
- (B) 1858
- (C) 1857
- (D) 1960

85. Provincial Autonomy was introduced in India by :
- (A) The Act of 1935
 - (B) The Act of 1909
 - (C) The Act of 1919
 - (D) The Act of 1892
86. The President of India can nominate how many members to Rajya Sabha and Lok Sabha respectively ?
- (A) 12, 3
 - (B) 12, 2
 - (C) 10, 4
 - (D) 6, 2
87. The Rajya Sabha can have the maximum strength of members.
- (A) 238
 - (B) 220
 - (C) 255
 - (D) 250
88. Rukmini Devi Arindale is associated with :
- (A) Mohiniyattam
 - (B) Kuchipudi
 - (C) Kathak
 - (D) Bharatnatyam

89. is famous for its Gol

Gumbaz.

(A) Patna

(B) Madras

(C) Hyderabad

(D) Bijapur

90. "SAARC" has its headquarters

at :

(A) Lahore

(B) Delhi

(C) Singapore

(D) Katmandu

91. Kalsi, Neri and Rajban were capitals

of which state ?

(A) Mandi

(B) Rampur-Bushahr

(C) Sirmour

(D) Bilaspur

92. First Rajya Sabha member from

Himachal Pradesh was :

(A) Anand Chand

(B) Shiva Nand Ramaul

(C) Chiranjilal Verma

(D) Leela Devi

93. One of the hydro-electricity projects of H.P. is unique in the sense that although physically it is part of Himachal but its area is administered according to the laws of Punjab. The project is :

- (A) Nathpa-Jhakhri
- (B) Shanan
- (C) Pong Dam
- (D) Sanjay Pariyojana

94. Solan Gola is a famous variety of :

- (A) Apricot
- (B) Lemon
- (C) Mushroom
- (D) Tomato

95. What was the ancient name of Bharmour ?

- (A) Champa Nagar
- (B) Brahma Nagar
- (C) Brahmapur
- (D) Chamba

96. Who fought the famous battle at Mahal-Morian with Sansar Chand ?

- (A) Rulers of Sirmour
- (B) Gorkhas
- (C) Prince of Chamba
- (D) Ranjit Singh

97. Which treaty signalled the departure of the Gorkhas and the arrival of the British on the political canvas of Shimla Hill states ?

- (A) Treaty of Malaun
- (B) Treaty of Ramgarh
- (C) Treaty of Sagauli
- (D) Treaty of Lahore

98. Bakshi Partap Singh prominent freedom fighter was awarded :

- (A) Tagma-e-Shatrunash
- (B) Padam Shri
- (C) Dhanush award
- (D) None of the above

99. Who was "Bhai Hirda Ram" ?

- (A) A prominent revolutionary of Mandi
- (B) A freedom fighter of Sirmour
- (C) A revolutionary of Kangra
- (D) A revolutionary of Bilaspur

100. What is the installed capacity of

Larji Hydel Project (MW) ?

- (A) 60 MW
- (B) 90 MW
- (C) 126 MW
- (D) 12 MW