

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

CPG-EE-2019 (Pharmaceutical Science)-(SET-X)

A

Sr. No. 10337

Time : 1½ Hours

Total Questions : 100

Max. Marks : 100

Roll No. (in figures) _____ (in words) _____

Candidate's Name _____ Date of Birth _____

Father's Name _____ Mother's Name _____

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(Signature of the Candidate)

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CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

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SEAL

1. Identify the HLB value of O/W emulsifiers :
(1) 4-6 (2) 8-18 (3) 13-15 (4) 7-9
2. The granule density, ρ_g , of sodium bicarbonate is 1.450 and the true density, ρ , is 2.033. Compute the intraparticle porosity.
(1) 28.6% (2) 35.4% (3) 42.7% (4) 16.3%
3. Identify the particle size of colloidal dispersion :
(1) Greater than 0.5 μm (2) Less than 1 nm
(3) 1 nm to 0.5 μm (4) All of the above
4. Following are inclusion/occlusion compounds except :
(1) Channel lattice type (2) Layer type
(3) Clathrates (4) Polymer type
5. In the Gram staining of bacteria, iodine is used as :
(1) Primary stain (2) Counter stain (3) Mordant (4) Decolorizer
6. Z-value is the increase in temperature needed to reduce the D-value of an organism by :
(1) 90% (2) 70% (3) 50% (4) 10%
7. Following are the endotoxin producing bacteria of interest in immunology except :
(1) *Vibrio cholera* (2) *Clostridium tetani*
(3) *Salmonella typhi* (4) *Bordetella pertusis*
8. Identify the strain used in the Rideal Walker Test :
(1) *Vibrio cholera* (2) *Clostridium tetani*
(3) *Salmonella typhi* (4) *Bordetella pertusis*
9. According to Medicinal and Toilet Preparations (Excise Duties) Act 1955, the "derivative of Opium" means :
(1) Medicinal opium, that is, opium which has undergone the processes necessary to adapt it for medicinal use
(2) Prepared opium, that is, any product of opium obtained by any series of operations designed to transform opium into an extract suitable for smoking and the dross or other residue remaining after opium is smoked'
(3) Morphine, that is, the principal alkaloid of opium having the chemical formula $\text{C}_{17}\text{H}_{19}\text{NO}_3$ and its salts and its derivatives
(4) All of the above

10. According to Patents Act 1970, identify the inventions that are not patentable :
- (1) An invention which is frivolous or which claims anything obviously contrary to well established natural laws
 - (2) A method of agriculture or horticulture
 - (3) An invention which in effect, is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components
 - (4) All of the above
11. According to Drugs and Cosmetics Act, identify the Schedule that contains various regulations and requirements for disinfectant fluids :
- (1) Schedule P
 - (2) Schedule O
 - (3) Schedule S
 - (4) Schedule U
12. According to the Insecticides Act 1968, the chairman of The Central Insecticides Board is :
- (1) The Drugs Controller, India
 - (2) The Director General, Indian Council of Medical Research
 - (3) The Director General of Health Services
 - (4) The Director General, Indian Council of Agricultural Research
13. The method which calculates the child dose based on age is ?
- (1) Clark's rule
 - (2) Young's rule
 - (3) Fischer rule
 - (4) None of the above
14. A medicinal pill made of a thick liquid that has been solidified and is meant to be consumed by light chewing and allowing it to dissolve in the mouth is known as :
- (1) Pastille
 - (2) Tablet triturate
 - (3) Jellie
 - (4) Gel
15. Identify the equipment used for moist heat sterilization :
- (1) Hot air oven
 - (2) Hepafilter
 - (3) Autoclave
 - (4) Microwave sterilizer
16. Expand the term MEDLINE :
- (1) Medical Legal Analysis and Review System Online
 - (2) Medicine Literature Analysis and Review System Online
 - (3) Medical Literature Analysis and Redressal System Online
 - (4) Medical Literature Analysis and Retrieval System Online

24. Elimination rate constant (K_{elim}) is defined by the following parameter :
- (1) Rate of absorption
 - (2) Maximum concentration of substance in plasma
 - (3) Highest single dose
 - (4) Half life
25. Identify the preparation which should be applied with friction ?
- (1) Liniment
 - (2) Lotion
 - (3) Ointment
 - (4) Cream
26. Citric acid is used in limit test for Iron :
- (1) To make the medium alkaline
 - (2) To prevent the precipitation of iron
 - (3) To trap hydrogen sulphide gas
 - (4) None of the above
27. British anti-Lewisite is chemically :
- (1) Dimercaptosuccinic acid
 - (2) Dimercapto-propane sulfonate
 - (3) Dimercaprol
 - (4) Pencillamine
28. Potash alum obtained by adding a concentrated solution of potassium sulfate to a hot solution of an equimolecular proportion of :
- (1) Aluminium chloride
 - (2) Aluminium oxide
 - (3) Zinc sulfate
 - (4) Aluminium sulfate
29. Identify the radioisotope used as medical radiotracer in PET scans :
- (1) Tritium (^3H)
 - (2) Beryllium-10
 - (3) Fluorine-18
 - (4) Cobalt-60
30. For one mole of gas C_p and C_v relations are :
- (1) $C_p = C_v + R$
 - (2) $C_p = C_v - R$
 - (3) $C_p = C_v$
 - (4) $C_p = C_v \times R$
31. Which of the following is *not* true for zero order reaction ?
- (1) Rate = Rate constant
 - (2) Rate is independent of concentrations
 - (3) Rate does not change with time
 - (4) Rate increase with increase in concentrations

32. An SN1 reaction results in :
(1) Retention (2) Inversion (3) Racemisation (4) Elimination
33. A chemical reaction used for the ortho-formylation of phenols is known as :
(1) Reimer-Tiemann reaction (2) Cannizzaro reaction
(3) Schotten-Baumann reaction (4) Gould-Jacobs reaction
34. An organic reaction that forms an ester from a ketone or a lactone from a cyclic ketone, using peroxyacids or peroxides as the oxidant is known as :
(1) Hoffmann reaction (2) Beyer-Villiger reaction
(3) Beckman reaction (4) Perkin reaction
35. Sodium carbonate can be used for standardization of following aqueous acids except :
(1) Hydrochloric acid (2) Nitric acid
(3) Acetic acid (4) Sulphuric acid
36. Identify the strong acid used in non-aqueous titration of weak bases except :
(1) Hydrochloric acid (2) Perchloric acid
(3) Lithium methoxide (4) Sulphuric acid
37. The end point of complexometric titration by EDTA using Eriochrome Black T is as an indicator is formation of colour.
(1) Blue (2) Red (3) Green (4) Orange
38. The C=O stretch range of carbonyl group in the IR spectra of α, β - unsaturated esters is cm^{-1} .
(1) 1760-1665 (2) 1730-1715 (3) 1370-1350 (4) 675-600
39. The principle of separation of column chromatography is :
(1) Partition (2) Absorption (3) Adsorption (4) Gel filtration
40. Identify the coupling constant J value for cis compounds in NMR :
(1) 6-11 (2) 12-18 (3) 0-8 (4) 5-8
41. The correlation coefficient (r) value required to qualify a QSAR equation by Hansch analysis using in vitro data is :
(1) 0.3 (2) 0.5 (3) 0.7 (4) 0.9

42. The steroidal hydrocarbon with methyl groups at C-10 and C-13 but without carbon substitution a side chain at C-17 is named :
- (1) Androstane (2) Gonane
(3) Estrane (4) Pregnane
43. Identify the IUPAC name of furosemide :
- (1) 4-Chloro-2-[(3-furylethyl)amino]-5-sulfamoylbenzoic acid
(2) 4-Chloro-2-[(2-furylmethyl)amino]-5-sulfamoylbenzoic acid
(3) 4-Chloro-3-[(2-furylmethyl)amino]-2-sulfamoylbenzoic acid
(4) 3-Chloro-4-[(2-furylmethyl)amino]-2-sulfamoylbenzoic acid
44. Identify the antimalarial drug belongs to the 8-amino quinoline nucleus :
- (1) Chloroquine (2) Amodiaquine (3) Mefloquine (4) Primaquine
45. Identify the highly active erythromycin :
- (1) Erythromycin A (2) Erythromycin B
(3) Erythromycin C (4) Erythromycin D
46. Identify the synthetic method for the synthesis of quinoline :
- (1) Conrad-Limpach-Knorr Synthesis (2) Skraup Synthesis
(3) Friedlander Synthesis (4) All of the above
47. The type of cycloaddition process for even number of pi bonds under thermal condition is :
- (1) Suprafacial (2) Antarafacial
(3) Disrotary (4) None of the above
48. The process of synthesis of glucose from noncarbohydrate sources is termed as :
- (1) Glycolysis (2) Glcogenesis
(3) Gluconeogenesis (4) Glycogenolysis
49. Citrullinemia, the urea cycle disorder is due to the deficiency of the enzyme :
- (1) Carbomoyl phosphate synthetase (2) Arginase
(3) Argininosuccinic acid synthase (4) Ornithine transcarbomylase

50. Identify the coenzyme derived from Vitamin B1 :
- (1) Thiamine pyrophosphate (2) Flavin mononucleotide
(3) Coenzyme A (4) Nicotinamide adenine dinucleotide
51. Identify the mediator for Type 1 hypersensitivity reaction :
- (1) IgM (2) IgE (3) IgG (4) IgF
52. During acute inflammation, the leukocyte chemotaxis is activated by :
- (1) Leukotriene B4 (2) Chemokines
(3) Interleukin-1 (4) All of the above
53. The airway remodeling in Asthma is characterized by :
- (1) Inflammation
(2) Mucus hypersecretion
(3) Airway smooth muscle hypertrophy
(4) All of the above
54. Identify the phase II metabolic reaction :
- (1) Acetylation (2) Oxidation
(3) Reduction (4) Hydrolysis
55. The β -adrenoreceptor is an example of which type of receptor ?
- (1) Tyrosine kinase receptor
(2) G-protein coupled receptor
(3) Voltage gated ion channel
(4) Ligand gated ion channel
56. When does tachyphylaxis occur ?
- (1) When there is an increased risk of side effects occurring
(2) When smaller doses cause an increased response to a drug
(3) When there is a decreased receptor-mediated response to a drug
(4) When the drug causes a faster heart rate

57. The development of drug addiction is caused by which of the following drug/neurotransmitter interactions ?
- (1) The drug increases the release of GABA
 - (2) The drug increases uptake of dopamine from the synaptic cleft
 - (3) The drug inhibits the release of dopamine into the synaptic cleft
 - (4) The drug inhibits the release of GABA
58. Which of the following is *not* a type of antagonist ?
- (1) Partial competitive
 - (2) Reversible competitive
 - (3) Irreversible competitive
 - (4) Non-competitive
59. When two drugs act on the same receptor the resulting drug interaction is said to be which of the following ?
- (1) Predictable
 - (2) Unpredictable
 - (3) Additive
 - (4) Synergistic
60. Which receptor does the cardiac glycoside digoxin bind to ?
- (1) ATP-dependent K^+ channel
 - (2) Na^+/K^+ antiporter
 - (3) ATP-dependent Ca_2^+ channel
 - (4) Na^+/Ca_2^+ antiporter
61. Why do ACE inhibitors cause cough ?
- (1) ACE causes the accumulation of bradykinin.
 - (2) Angiotensin I is a powerful bronchoconstrictor.
 - (3) Angiotensin II is a powerful vasoconstrictor.
 - (4) ACE breaks down bradykinin.
62. Why should care be taken when prescribing warfarin and amiodarone in combination ?
- (1) Amiodarone and warfarin both have an anticoagulant effect.
 - (2) Amiodarone may reverse the anticoagulant effect of warfarin.
 - (3) Amiodarone may increase the anticoagulant effect of warfarin.
 - (4) Warfarin may reverse the antiarrhythmic effect of amiodarone.
63. Which of the following describes salbutamol, a β_2 -adrenoceptor agonists ?
- (1) Direct acting sympathomimetic.
 - (2) Indirect acting sympathomimetic.
 - (3) Direct acting parasympathomimetic.
 - (4) Indirect acting parasympathomimetic.

64. The drug latanoprost decreases the intra ocular tension by :
- (1) α -Adrenergic agnostic activity
 - (2) Carbonic anhydrase inhibition
 - (3) β -Adrenergic blocking activity
 - (4) $\text{PGF}_{2\alpha}$ -agonistic activity
65. Which of the following is *not* caused by the activation of the sympathetic nervous system ?
- (1) An increase in blood pressure.
 - (2) A decrease in heart rate.
 - (3) An increase in cardiac output.
 - (4) An increase Ca_2^+ release in cardio myocytes.
66. Following are the drugs that enhance the action of sulphonyl urea in diabetic patient except :
- | | |
|--------------------|---------------------|
| (1) Phenylbutazone | (2) Cimetidine |
| (3) Phenytoin | (4) Chloramphenicol |
67. Identify the aromatase inhibitor :
- | | | | |
|----------------|--------------|---------------|----------------|
| (1) Raloxifene | (2) Tibolone | (3) Gestodene | (4) Exemestane |
|----------------|--------------|---------------|----------------|
68. Identify the short acting neuromuscular blocking agent :
- | | | | |
|----------------|----------------|-----------------|------------------|
| (1) Mivacurium | (2) Atracurium | (3) Pancuronium | (4) Pipecuronium |
|----------------|----------------|-----------------|------------------|
69. Identify the drug which abolishes the therapeutic effect of levodopa by enhancing peripheral decarboxylation :
- | | |
|-----------------|-------------------|
| (1) Domperidone | (2) Pyridoxine |
| (3) Reserpine | (4) Phenothaizine |
70. Identify the advantage of Nalmafene over other opioid antagonists :
- (1) Longer half-life
 - (2) Greater oral bioavailability
 - (3) No observed dose-dependent liver toxicity
 - (4) All of the above

71. Identify the HIV protease inhibitor used in the treatment of AIDS :
(1) Lamivudine (2) Efavirenz (3) Indinavir (4) Maraviroc
72. Jarisch-Herxheimer reaction is an adverse effect of the antibiotic :
(1) Penicillin (2) Streptomycin
(3) Chloramphenicol (4) Amphotericin-B
73. Identify the blood test that used to determine significant levels of methemalbumin in the blood :
(1) Mantoux test (2) Schumm test
(3) Western blot test (4) ELISA test
74. Identify the causative organism for tuberculosis :
(1) *Mycobacterium kansasii* (2) *Mycobacterium avium*
(3) *Mycobacterium tuberculosis* (4) All of the above
75. Identify the anticancer drug which inhibit the synthesis of Thymidylate synthase :
(1) Methotrexate (2) Paclitaxel (3) Etoposide (4) 5-Fluorouracil
76. According to morphological classification the identify the crude drug belongs to the category of flower :
(1) Turmeric (2) Ginger (3) Clove (4) Aconite
77. The following are the natural auxins except :
(1) Indole 3-butyric acid (2) Indole-3-acetonitrile
(3) Phenyl acetic acid (4) 4-Chloroindole 3-acetic acid
78. Identify the crude drug which contains unicellular glandular trichome ?
(1) Strophanthus (2) Betel (3) Lobelia (4) Datura
79. Cruciferous stomata is present in :
(1) Digitalis (2) Senna (3) Vasaka (4) Belladonna
80. Identify the adulterant of isapgol seeds :
(1) *Plantago asiatica* (2) *Plantago purshii*
(3) *Plantago lanceolata* (4) *Plantago Wrightiana*

81. Kokum butter is the fat expressed from the seeds of :
(1) *Garcinia indica* (2) *Carthamus tinctorius*
(3) *Pongamia glabra* (4) *Galeorhinus zyopetrus*
82. Devil's dung is the synonym of :
(1) *Cannabis* (2) *Asafoetida* (3) *Myrrh* (4) *Colocynth*
83. The chief chemical constituent present in *Anethum graveolens* is :
(1) D-Limonene (2) p-Cymene (3) Coumarin (4) Carvone
84. Identify the crude drug which give positive result to Borntragers test ?
(1) Squill (2) Rhubarb (3) Bitter almond (4) Ginseng
85. Identify the crude drug that contains quinoline alkaloid :
(1) *Camptotheca* (2) Ergot (3) *Rauwolfia* (4) *Vinca*
86. Identify the plant drug useful in the treatment of congestive heart failure :
(1) Ergot (2) Gokhru (3) *Digitalis* (4) *Rauwolfia*
87. Identify the mucolytic enzyme :
(1) Pepsin (2) Urokinase (3) Streptokinase (4) Muramidase
88. The ash value of senega is about %.
(1) 4 (2) 8 (3) 12 (4) 16
89. Myrobalan consists of dried ripe and fully matured fruits of :
(1) *Terminalia belerica* (2) *Terminalia chebula*
(3) *Quercus infectoria* (4) *Picrasma excelsa*
90. Ayurvedic preparation obtained from the ash of drugs is known as :
(1) Lehya (2) Taila (3) Ksharas (4) Lepa
91. Identify the source of caraway :
(1) *Foeniculum vulgare* (2) *Myristica fragrans*
(3) *Anethum garveolans* (4) *Carum curvi*

92. Following are the adulterants of nutmeg except :
- (1) *Myristica malabarica* (2) *Myristica fragrans*
(3) *Myristica beddomei* (4) *Myristica attenuata*
93. The following are the biosynthetic products of the tyrosine except :
- (1) Codiene (2) Thebaine (3) Mescaline (4) Morphine
94. Identify the number of isoprene units in sesquiterpenes :
- (1) 3 (2) 4 (3) 6 (4) 8
95. Identify the cardiovascular drug obtained from the marine source :
- (1) Ara-C (2) Crassin acetate (3) Eptatrein (4) Acanthifolicin
96. Identify the test for steroids :
- (1) Biuret test (2) Murexide test (3) Legals test (4) Salkowski test
97. Goldbeater's skin test is the identification test for :
- (1) Glycosides (2) Steroids (3) Tannins (4) Napthoquinones
98. Identify the source of American ginseng :
- (1) *Panax ginseng* (2) *Panax quinquefolium*
(3) *Panax notoginseng* (4) *Panax japonica*
99. Identify the drug used as antixerophthalmic factor :
- (1) Evening primerose oil (2) Corn oil
(3) Safflower oil (4) Shark liver oil
100. Cotton consists of the epidermal trichomes or hairs of the seeds of the cultivated species of *Gossypium herbaceurre* and *Gossypium barbadense* belongs to the family :
- (1) Malvaceae (2) Liliaceae (3) Rubiaceae (4) Apocynacece

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1. According to Drugs and Cosmetics Act, identify the Schedule that contains various regulations and requirements for disinfectant fluids :
(1) Schedule P (2) Schedule O (3) Schedule S (4) Schedule U
2. According to the Insecticides Act 1968, the chairman of The Central Insecticides Board is :
(1) The Drugs Controller, India
(2) The Director General, Indian Council of Medical Research
(3) The Director General of Health Services
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3. The method which calculates the child dose based on age is ?
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(1) Pastille (2) Tablet triturate (3) Jellie (4) Gel
5. Identify the equipment used for moist heat sterilization :
(1) Hot air oven (2) Hepafilter
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6. Expand the term MEDLINE :
(1) Medical Legal Analysis and Review System Online
(2) Medicine Literature Analysis and Review System Online
(3) Medical Literature Analysis and Redressal System Online
(4) Medical Literature Analysis and Retrieval System Online
7. Following are the natural circulation evaporators except :
(1) Evaporating pan (2) Evaporating stills
(3) Film evaporator (4) Short tube evaporator
8. Identify the size reduction apparatus worked based on the principle of combined Impact and attrition :
(1) Ball mill (2) Roller mill
(3) Hammer mill (4) Cutter mill

9. Following are the demerits of filter press except :

- (1) It is batch filter, so that there is good deal of "down time"
- (2) Operation is critical as the frames should be full
- (3) It provides a large surface area in a relatively small floor space
- (4) The filter press can be used for slurries containing less than 5% of solids

10. Identify the advantage of human dried plasma :

- (1) If properly stored it keeps well for at least five years
- (2) If protected from light it can be stored at room temperature provided this is below 20°C
- (3) It can be given to patients of any blood groups
- (4) All of the above

11. Identify the source of caraway :

- | | |
|-------------------------------|-------------------------------|
| (1) <i>Foeniculum vulgare</i> | (2) <i>Myristica fragrans</i> |
| (3) <i>Anethum graveolens</i> | (4) <i>Carum curvi</i> |

12. Following are the adulterants of nutmeg except :

- | | |
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| (1) <i>Myristica malabarica</i> | (2) <i>Myristica fragrans</i> |
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13. The following are the biosynthetic products of the tyrosine except :

- | | | | |
|-------------|--------------|---------------|--------------|
| (1) Codeine | (2) Thebaine | (3) Mescaline | (4) Morphine |
|-------------|--------------|---------------|--------------|

14. Identify the number of isoprene units in sesquiterpenes :

- | | | | |
|-------|-------|-------|-------|
| (1) 3 | (2) 4 | (3) 6 | (4) 8 |
|-------|-------|-------|-------|

15. Identify the cardiovascular drug obtained from the marine source :

- | | | | |
|-----------|---------------------|----------------|--------------------|
| (1) Ara-C | (2) Crassin acetate | (3) Eptatretin | (4) Acanthifolicin |
|-----------|---------------------|----------------|--------------------|

16. Identify the test for steroids :

- | | | | |
|-----------------|-------------------|------------------|--------------------|
| (1) Biuret test | (2) Murexide test | (3) Legal's test | (4) Salkowski test |
|-----------------|-------------------|------------------|--------------------|

17. Goldbeater's skin test is the identification test for :

- | | | | |
|----------------|--------------|-------------|---------------------|
| (1) Glycosides | (2) Steroids | (3) Tannins | (4) Naphthoquinones |
|----------------|--------------|-------------|---------------------|

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20. Cotton consists of the epidermal trichomes or hairs of the seeds of the cultivated species of *Gossypium herbaceum* and *Gossypium barbadense* belongs to the family :
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(3) Rubiaceae (4) Apocynaceae
21. Identify the HIV protease inhibitor used in the treatment of AIDS :
- (1) Lamivudine (2) Efavirenz (3) Indinavir (4) Maraviroc
22. Jarisch-Herxheimer reaction is an adverse effect of the antibiotic :
- (1) Penicillin (2) Streptomycin
(3) Chloramphenicol (4) Amphotericin-B
23. Identify the blood test that used to determine significant levels of methemalbumin in the blood :
- (1) Mantoux test (2) Schumm test
(3) Western blot test (4) ELISA test
24. Identify the causative organism for tuberculosis :
- (1) *Mycobacterium kansasii* (2) *Mycobacterium avium*
(3) *Mycobacterium tuberculosis* (4) All of the above
25. Identify the anticancer drug which inhibit the synthesis of Thymidylate synthase :
- (1) Methotrexate (2) Paclitaxel (3) Etoposide (4) 5-Fluorouracil
26. According to morphological classification the identify the crude drug belongs to the category of flower :
- (1) Turmeric (2) Ginger (3) Clove (4) Aconite

27. The following are the natural auxins except :
- (1) Indole 3-butyric acid (2) Indole-3-acetonitrile
(3) Phenyl acetic acid (4) 4-Chloroindole 3-acetic acid
28. Identify the crude drug which contains unicellular glandular trichome ?
- (1) Strophanthus (2) Betel (3) Lobelia (4) Datura
29. Cruciferous stomata is present in :
- (1) Digitalis (2) Senna (3) Vasaka (4) Belladonna
30. Identify the adulterant of isapgol seeds :
- (1) Plantago asiatica (2) Plantago purshii
(3) Plantago lanceolata (4) Plantago Wrightiana
31. Identify the mediator for Type 1 hypersensitivity reaction :
- (1) IgM (2) IgE (3) IgG (4) IgF
32. During acute inflammation, the leukocyte chemotaxis is activated by :
- (1) Leukotriene B4 (2) Chemokines
(3) Interleukin-1 (4) All of the above
33. The airway remodeling in Asthma is characterized by :
- (1) Inflammation
(2) Mucus hypersecretion
(3) Airway smooth muscle hypertrophy
(4) All of the above
34. Identify the phase II metabolic reaction :
- (1) Acetylation (2) Oxidation (3) Reduction (4) Hydrolysis
35. The β -adrenoreceptor is an example of which type of receptor ?
- (1) Tyrosine kinase receptor
(2) G-protein coupled receptor
(3) Voltage gated ion channel
(4) Ligand gated ion channel

36. When does tachyphylaxis occur ?
- (1) When there is an increased risk of side effects occurring
 - (2) When smaller doses cause an increased response to a drug
 - (3) When there is a decreased receptor-mediated response to a drug
 - (4) When the drug causes a faster heart rate
37. The development of drug addiction is caused by which of the following drug/neurotransmitter interactions ?
- (1) The drug increases the release of GABA
 - (2) The drug increases uptake of dopamine from the synaptic cleft
 - (3) The drug inhibits the release of dopamine into the synaptic cleft
 - (4) The drug inhibits the release of GABA
38. Which of the following is *not* a type of antagonist ?
- (1) Partial competitive
 - (2) Reversible competitive
 - (3) Irreversible competitive
 - (4) Non-competitive
39. When two drugs act on the same receptor the resulting drug interaction is said to be which of the following ?
- (1) Predictable
 - (2) Unpredictable
 - (3) Additive
 - (4) Synergistic
40. Which receptor does the cardiac glycoside digoxin bind to ?
- (1) ATP-dependent K^+ channel
 - (2) Na^+/K^+ antiporter
 - (3) ATP-dependent Ca_2^+ channel
 - (4) Na^+/Ca_2^+ antiporter
41. Which of the following is *not* true for zero order reaction ?
- (1) Rate = Rate constant
 - (2) Rate is independent of concentrations
 - (3) Rate does not change with time
 - (4) Rate increase with increase in concentrations
42. An SN1 reaction results in :
- (1) Retention
 - (2) Inversion
 - (3) Racemisation
 - (4) Elimination

43. A chemical reaction used for the ortho-formylation of phenols is known as :
- (1) Reimer-Tiemann reaction (2) Cannizzaro reaction
(3) Schotten-Baumann reaction (4) Gould-Jacobs reaction
44. An organic reaction that forms an ester from a ketone or a lactone from a cyclic ketone, using peroxyacids or peroxides as the oxidant is known as :
- (1) Hoffmann reaction (2) Beyer-Villiger reaction
(3) Beckman reaction (4) Perkin reaction
45. Sodium carbonate can be used for standardization of following aqueous acids except :
- (1) Hydrochloric acid (2) Nitric acid
(3) Acetic acid (4) Sulphuric acid
46. Identify the strong acid used in non-aqueous titration of weak bases except :
- (1) Hydrochloric acid (2) Perchloric acid
(3) Lithium methoxide (4) Sulphuric acid
47. The end point of complexometric titration by EDTA using Eriochrome Black T is as an indicator is formation of colour.
- (1) Blue (2) Red (3) Green (4) Orange
48. The C=O stretch range of carbonyl group in the IR spectra of α, β - unsaturated esters is cm^{-1} .
- (1) 1760-1665 (2) 1730-1715 (3) 1370-1350 (4) 675-600
49. The principle of separation of column chromatography is :
- (1) Partition (2) Absorption (3) Adsorption (4) Gel filtration
50. Identify the coupling constant J value for cis compounds in NMR :
- (1) 6-11 (2) 12-18 (3) 0-8 (4) 5-8
51. Identify the size of capsule which holds maximum drug content ?
- (1) 000 (2) 00 (3) 0 (4) 1
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 - (2) Carbonic anhydrase inhibition
 - (3) β -Adrenergic blocking activity
 - (4) $\text{PGF}_{2\alpha}$ -agonistic activity
75. Which of the following is *not* caused by the activation of the sympathetic nervous system ?
- (1) An increase in blood pressure.
 - (2) A decrease in heart rate.
 - (3) An increase in cardiac output.
 - (4) An increase Ca_2^+ release in cardio myocytes.

76. Following are the drugs that enhance the action of sulphonyl urea in diabetic patient except :
- (1) Phenylbutazone (2) Cimetidine
(3) Phenytoin (4) Chloramphenicol
77. Identify the aromatase inhibitor :
- (1) Raloxifene (2) Tibolone (3) Gestodene (4) Exemestane
78. Identify the short acting neuromuscular blocking agent :
- (1) Mivacurium (2) Atracurium (3) Pancuronium (4) Pipecuronium
79. Identify the drug which abolishes the therapeutic effect of levodopa by enhancing peripheral decarboxylation :
- (1) Domperidone (2) Pyridoxine
(3) Reserpine (4) Phenothiazine
80. Identify the advantage of Nalmefene over other opioid antagonists :
- (1) Longer half-life
(2) Greater oral bioavailability
(3) No observed dose-dependent liver toxicity
(4) All of the above
81. Identify the HLB value of O/W emulsifiers :
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91. Kokum butter is the fat expressed from the seeds of :
(1) *Garcinia indica* (2) *Carthamus tinctorius*
(3) *Pongamia glabra* (4) *Galeorhinus zyopetrus*

92. Devil's dung is the synonym of :
(1) Cannabis (2) Asafoetida (3) Myrrh (4) Colocynth
93. The chief chemical constituent present in *Anethum graveolens* is :
(1) D-Limonene (2) p-Cymene (3) Coumarin (4) Carvone
94. Identify the crude drug which give positive result to Borntragers test ?
(1) Squill (2) Rhubarb (3) Bitter almond (4) Ginseng
95. Identify the crude drug that contains quinoline alkaloid :
(1) Camptotheca (2) Ergot (3) Rauwolfia (4) Vinca
96. Identify the plant drug useful in the treatment of congestive heart failure :
(1) Ergot (2) Gokhru (3) Digitalis (4) Rauwolfia
97. Identify the mucolytic enzyme :
(1) Pepsin (2) Urokinase (3) Streptokinase (4) Muramidase
98. The ash value of senega is about %.
(1) 4 (2) 8 (3) 12 (4) 16
99. Myrobalan consists of dried ripe and fully matured fruits of :
(1) Terminalia belerica (2) Terminalia chebula
(3) Quercus infectoria (4) Picrasma excelsa
100. Ayurvedic preparation obtained from the ash of drugs is known as :
(1) Lehya (2) Taila (3) Ksharas (4) Lepa

Total No. of Printed Pages : 13

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CPG-EE-2019 (Pharmaceutical Science)-(SET-X)

C

10339

Sr. No.

Time : 1½ Hours

Total Questions : 100

Max. Marks / 100

Roll No. (in figures) _____ (in words) _____

Candidate's Name _____ Date of Birth _____

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(Signature of the Candidate)

(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

1. All questions are **compulsory** and carry equal marks. The candidates are required to attempt all questions.
2. The candidate **must return** this question booklet and the OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / misbehaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along with answer key of all the A, B, C and D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case will be considered.
5. The candidate **must not** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers **must not** be ticked in the question booklet.
6. **Use only black or blue ball point pen of good quality in the OMR Answer-Sheet.**
7. There will be **negative** marking. Each correct answer will be awarded **one** full mark and each incorrect answer will be negatively marked for which the candidate will get ¼ Mark (0.25 Mark) discredit. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
8. *Before answering the questions, the candidates should ensure that they have been supplied correct & complete question booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.*

SEAI

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(1) 3 (2) 4 (3) 6 (4) 8
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(1) Glycosides (2) Steroids (3) Tannins (4) Napthoquinones
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- | | |
|--------------------|---------------------|
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- | | | | |
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- (1) If properly stored it keeps well for at least five years
(2) If protected from light it can be stored at room temperature provided this is below 20°C
(3) It can be given to patients of any blood groups
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91. Identify the mediator for Type 1 hypersensitivity reaction :
- (1) IgM (2) IgE (3) IgG (4) IgF
92. During acute inflammation, the leukocyte chemotaxis is activated by :
- (1) Leukotriene B4 (2) Chemokines
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93. The airway remodeling in Asthma is characterized by :
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94. Identify the phase II metabolic reaction :
- (1) Acetylation (2) Oxidation
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95. The β -adrenoreceptor is an example of which type of receptor ?
- (1) Tyrosine kinase receptor
(2) G-protein coupled receptor
(3) Voltage gated ion channel
(4) Ligand gated ion channel
96. When does tachyphylaxis occur ?
- (1) When there is an increased risk of side effects occurring
(2) When smaller doses cause an increased response to a drug
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97. The development of drug addiction is caused by which of the following drug/neurotransmitter interactions ?
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98. Which of the following is *not* a type of antagonist ?
- (1) Partial competitive (2) Reversible competitive
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99. When two drugs act on the same receptor the resulting drug interaction is said to be which of the following ?
- (1) Predictable (2) Unpredictable (3) Additive (4) Synergistic
100. Which receptor does the cardiac glycoside digoxin bind to ?
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(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU
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CPG-EE-2019 (Pharmaceutical Science)-(SET-X)

D

10340

Sr. No.

Time : 1½ Hours

Total Questions : 100

Max. Marks : 100

Roll No. (in figures) _____ (in words) _____

Candidate's Name _____ Date of Birth _____

Father's Name _____ Mother's Name _____

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(Signature of the Candidate)

(Signature of the Invigilator)

**CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE
STARTING THE QUESTION PAPER.**

- All questions are **compulsory** and carry equal marks. The candidates are required to attempt all questions.
- The candidate **must return** this question booklet and the OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / misbehaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- Question Booklet along with answer key of all the A, B, C and D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case will be considered.
- The candidate **must not** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers **must not** be ticked in the question booklet.
- Use only black or blue ball point pen of good quality in the OMR Answer-Sheet.**
- There will be **negative** marking. Each correct answer will be awarded **one** full mark and each incorrect answer will be negatively marked for which the candidate will get ¼ Mark (0.25 Mark) discredit. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
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SEAL

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 - (2) *Myristica fragrans*
 - (3) *Anethum garveolans*
 - (4) *Carum curvi*
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- (1) *Myristica malabarica*
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 - (3) *Myristica beddomei*
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43. The following are the biosynthetic products of the tyrosine except :
(1) Codiene (2) Thebaine (3) Mescaline (4) Morphine
44. Identify the number of isoprene units in sesquiterpenes :
(1) 3 (2) 4 (3) 6 (4) 8
45. Identify the cardiovascular drug obtained from the marine source :
(1) Ara-C (2) Crassin acetate (3) Eptatretin (4) Acanthifolicin
46. Identify the test for steroids :
(1) Biuret test (2) Murexide test (3) Legals test (4) Salkowski test
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(1) Glycosides (2) Steroids (3) Tannins (4) Napthoquinones
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(1) Panax ginseng (2) Panax quinquefolium
(3) Panax notoginseng (4) Panax japonica
49. Identify the drug used as antixeropthalmic factor :
(1) Evening primerose oil (2) Corn oil
(3) Safflower oil (4) Shark liver oil
50. Cotton consists of the epidermal trichomes or hairs of the seeds of the cultivated species of *Gossypium herbaceurre* and *Gossypium barbadense* belongs to the family :
(1) Malvaceae (2) Liliaceae (3) Rubiaceae (4) Apocynacece
51. Why do ACE inhibitors cause cough ?
(1) ACE causes the accumulation of bradykinin.
(2) Angiotensin I is a powerful bronchoconstrictor.
(3) Angiotensin II is a powerful vasoconstrictor.
(4) ACE breaks down bradykinin.
52. Why should care be taken when prescribing warfarin and amiodarone in combination ?
(1) Amiodarone and warfarin both have an anticoagulant effect.
(2) Amiodarone may reverse the anticoagulant effect of warfarin.
(3) Amiodarone may increase the anticoagulant effect of warfarin.
(4) Warfarin may reverse the antiarrhythmic effect of amiodarone.

53. Which of the following describes salbutamol, a β_2 -adrenoceptor agonists ?
- (1) Direct acting sympathomimetic.
 - (2) Indirect acting sympathomimetic.
 - (3) Direct acting parasympathomimetic.
 - (4) Indirect acting parasympathomimetic.
54. The drug latanoprost decreases the intra ocular tension by :
- (1) α -Adrenergic agnostic activity
 - (2) Carbonic anhydrase inhibition
 - (3) β -Adrenergic blocking activity
 - (4) $\text{PGF}_{2\alpha}$ -agonistic activity
55. Which of the following is *not* caused by the activation of the sympathetic nervous system ?
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71. The correlation coefficient (r) value required to qualify a QSAR equation by Hansch analysis using in vitro data is :
- (1) 0.3 (2) 0.5 (3) 0.7 (4) 0.9
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- (1) Androstane (2) Gonane
(3) Estrane (4) Pregnane
73. Identify the IUPAC name of furosemide :
- (1) 4-Chloro-2-[(3-furylethyl)amino]-5-sulfamoylbenzoic acid
(2) 4-Chloro-2-[(2-furylmethyl)amino]-5-sulfamoylbenzoic acid
(3) 4-Chloro-3-[(2-furylmethyl)amino]-2-sulfamoylbenzoic acid
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- (1) Erythromycin A (2) Erythromycin B
(3) Erythromycin C (4) Erythromycin D
76. Identify the synthetic method for the synthesis of quinoline :
- (1) Conrad-Limpach-Knorr Synthesis (2) Skraup Synthesis
(3) Friedlander Synthesis (4) All of the above
77. The type of cycloaddition process for even number of pi bonds under thermal condition is :
- (1) Suprafacial (2) Antarafacial
(3) Disrotary (4) None of the above

78. The process of synthesis of glucose from noncarbohydrate sources is termed as :
- (1) Glycolysis (2) Glcogenesis
(3) Gluconeogenesis (4) Glycogenolysis
79. Citrullinemia, the urea cycle disorder is due to the deficiency of the enzyme :
- (1) Carbomoyl phosphate synthetase (2) Arginase
(3) Argininosuccinic acid synthase (4) Ornithine transcarbomylase
80. Identify the coenzyme derived from Vitamin B1 :
- (1) Thiamine pyrophosphate (2) Flavin mononucleotide
(3) Coenzyme A (4) Nicotinamide adenine dinucleotide
81. Identify the size of capsule which holds maximum drug content ?
- (1) 000 (2) 00 (3) 0 (4) 1
82. Separation of tablet into two or more layers due to air-entrapment in the granular material is known as :
- (1) Chipping (2) Capping
(3) Lamination (4) Mottling
83. Identify the properties of BCS class III drug :
- (1) High solubility and high permeability
(2) High solubility and low permeability
(3) Low solubility and high permeability
(4) Low solubility and Low permeability
84. Elimination rate constant (K_{elim}) is defined by the following parameter :
- (1) Rate of absorption
(2) Maximum concentration of substance in plasma
(3) Highest single dose
(4) Half life
85. Identify the preparation which should be applied with friction ?
- (1) Liniment (2) Lotion (3) Ointment (4) Cream

86. Citric acid is used in limit test for Iron :
- (1) To make the medium alkaline (2) To prevent the precipitation of iron
(3) To trap hydrogen sulphide gas (4) None of the above
87. British anti-Lewisite is chemically :
- (1) Dimercaptosuccinic acid (2) Dimercapto-propane sulfonate
(3) Dimercaprol (4) Pencillamine
88. Potash alum obtained by adding a concentrated solution of potassium sulfate to a hot solution of an equimolecular proportion of :
- (1) Aluminium chloride (2) Aluminium oxide
(3) Zinc sulfate (4) Aluminium sulfate
89. Identify the radioisotope used as medical radiotracer in PET scans :
- (1) Tritium (^3H) (2) Beryllium-10
(3) Fluorine-18 (4) Cobalt-60
90. For one mole of gas C_p and C_v relations are :
- (1) $C_p = C_v + R$ (2) $C_p = C_v - R$
(3) $C_p = C_v$ (4) $C_p = C_v \times R$
91. Identify the HLB value of O/W emulsifiers :
- (1) 4-6 (2) 8-18 (3) 13-15 (4) 7-9
92. The granule density, ρ_g , of sodium bicarbonate is 1.450 and the true density, ρ , is 2.033. Compute the intraparticle porosity.
- (1) 28.6% (2) 35.4% (3) 42.7% (4) 16.3%
93. Identify the particle size of colloidal dispersion :
- (1) Greater than $0.5 \mu\text{m}$ (2) Less than 1 nm
(3) 1 nm to $0.5 \mu\text{m}$ (4) All of the above
94. Following are inclusion/occlusion compounds except :
- (1) Channel lattice type (2) Layer type
(3) Clathrates (4) Polymer type

95. In the Gram staining of bacteria, iodine is used as :
(1) Primary stain (2) Counter stain (3) Mordant (4) Decolorizer
96. Z-value is the increase in temperature needed to reduce the D-value of an organism by :
(1) 90% (2) 70% (3) 50% (4) 10%
97. Following are the endotoxin producing bacteria of interest in immunology except :
(1) *Vibrio cholera* (2) *Clostridium tetani*
(3) *Salmonella typhi* (4) *Bordetella pertusis*
98. Identify the strain used in the Rideal Walker Test :
(1) *Vibrio cholera* (2) *Clostridium tetani*
(3) *Salmonella typhi* (4) *Bordetella pertusis*
99. According to Medicinal and Toilet Preparations (Excise Duties) Act 1955, the "derivative of Opium" means :
(1) Medicinal opium, that is, opium which has undergone the processes necessary to adapt it for medicinal use
(2) Prepared opium, that is, any product of opium obtained by any series of operations designed to transform opium into an extract suitable for smoking and the dross or other residue remaining after opium is smoked'
(3) Morphine, that is, the principal alkaloid of opium having the chemical formula $C_{17}H_{19}NO_3$ and its salts and its derivatives
(4) All of the above
100. According to Patents Act 1970, identify the inventions that are not patentable :
(1) An invention which is frivolous or which claims anything obviously contrary to well established natural laws
(2) A method of agriculture or horticulture
(3) An invention which in effect, is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components
(4) All of the above

Answer key of Pharmacy (Centralized Entrance Exam 2019)

Question No.	A	B	C	D
1	B	B	D	C ✓
2	A	C	A	A ✓
3	C	B	B	B ✓
4	D	A	D	C ✓
5	C	C	A	D ✓
6	A	D	D	C ✓
7	B	C	B	A ✓
8	C	A	C	B ✓
9	D	C	C	D ✓
10	D	D	A	C ✓
11	B	D	A	B ✓
12	C	B	C	D ✓
13	B	C	B	D ✓
14	A	A	D	A ✓
15	C	C	A	B ✓
16	D	D	B	C ✓
17	C	C	C	D ✓
18	A	B	D	A ✓
19	C	D	C	C ✓
20	D	A	A	B ✓
21	A	C	B	B ✓
22	C	A	A	C ✓
23	B	B	C	A ✓
24	D	C	D	B ✓
25	A	D	C	C ✓
26	B	C	A	B ✓
27	C	A	B	A ✓
28	D	B	C	B ✓
29	C	D	D	C ✓
30	A	C	D	A ✓
31	B	B	D	B ✓
32	C	D	B	C ✓
33	A	D	C	B ✓
34	B	A	A	A ✓
35	C	B	C	C ✓
36	B	C	D	D ✓
37	A	D	C	C ✓
38	B	A	B	A ✓
39	C	C	D	C ✓
40	A	B	A	D ✓
41	D	B	D	D ✓
42	A	C	C	B ✓
43	B	A	A	C ✓
44	D	B	D	A ✓
45	A	C	B	C ✓
46	D	B	C	D ✓
47	B	A	D	C ✓
48	C	B	A	B ✓
49	C	C	B	D ✓

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Answer key of Pharmacy (Centralized Entrance Exam 2019)				
Question No.	A	B	C	D
50	A	A	D	A ✓
51	B	A	B	D ✓
52	D	C	C	C ✓
53	D	B	A	A ✓
54	A	D	B	D ✓
55	B	A	C	B ✓
56	C	B	B	C ✓
57	D	C	A	D ✓
58	A	D	B	A ✓
59	C	C	C	B ✓
60	B	A	A	D ✓
61	D	D	C	A ✓
62	C	A	A	B ✓
63	A	B	B	D ✓
64	D	D	C	B ✓
65	B	A	D	A ✓
66	C	D	C	C ✓
67	D	B	A	D ✓
68	A	C	B	A ✓
69	B	C	D	B ✓
70	D	A	C	C ✓
71	C	D	A	D ✓
72	A	C	B	A ✓
73	B	A	D	B ✓
74	C	D	B	D ✓
75	D	B	A	A ✓
76	C	C	C	D ✓
77	A	D	D	B ✓
78	B	A	A	C ✓
79	D	B	B	C ✓
80	C	D	C	A ✓
81	A	B	B	A ✓
82	B	A	C	C ✓
83	D	C	B	B ✓
84	B	D	A	D ✓
85	A	C	C	A ✓
86	C	A	D	B ✓
87	D	B	C	C ✓
88	A	C	A	D ✓
89	B	D	C	C ✓
90	C	D	D	A ✓
91	D	A	B	B ✓
92	B	B	D	A ✓
93	C	D	D	C ✓
94	A	B	A	D ✓
95	C	A	B	C ✓
96	D	C	C	A ✓
97	C	D	D	B ✓
98	B	A	A	C ✓
99	D	B	C	D ✓
100	A	C	B	D ✓

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