

Total No. of Printed Pages : 13

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

A

PG-EE-July, 2026

SET-X

SUBJECT : Pharmaceutical Science 100009

Sr. No.

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

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

Name _____ Father's Name _____

Mother's Name _____ Date of Examination _____

(Signature of the Candidate)

(Signature of the Invigilator)

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PG-EE-July, 2026/(Pharmaceutical Science)(SET-X)/(A)

SEAL

1. The number of σ and π bonds in benzene molecule respectively are :
(1) 9 σ and 3 π (2) 6 σ and 6 π
(3) 6 σ and 3 π (4) 12 σ and 3 π
2. In the Lassaigne's test for nitrogen, the Prussian blue color is due to formation of :
(1) $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ (2) $\text{Na}_4[\text{Fe}(\text{CN})_6]$
(3) $\text{Fe}(\text{CN})_2$ (4) $\text{Fe}_3[\text{Fe}(\text{CN})_6]_2$
3. The chromophore in acetophenone is :
(1) Hydroxyl group
(2) Carbonyl group conjugated with benzene ring
(3) Methyl group
(4) Isolated carbonyl
4. The chemical shift of TMS in proton NMR is taken as :
(1) 1 ppm (2) 7.2 ppm
(3) 0 ppm (4) 10 ppm
5. The indicator used in Fajans method is :
(1) Methyl orange (2) Eriochrome Black T
(3) Phenolphthalein (4) Fluorescein
6. The compound that gives positive iodoform test is :
(1) Methanol (2) Propanol
(3) Ethanol (4) Butanol
7. In IR spectroscopy, the $\text{C}=\text{O}$ stretching frequency of a ketone appears around :
(1) 1600 cm^{-1} (2) 1200 cm^{-1}
(3) 3300 cm^{-1} (4) 1715 cm^{-1}
8. The number of optical isomers for tartaric acid is :
(1) 1 (2) 3
(3) 2 (4) 4
9. The reagent used in Benzoin condensation is :
(1) Conc. H_2SO_4 (2) Pyridine
(3) Sodium hydroxide (4) Thiamine hydrochloride

10. The catalyst used in hydrogenation of alkenes is :
(1) Palladium on carbon (2) Platinum oxide
(3) Raney nickel (4) All of the above
11. The product of reduction of benzamide with LiAlH_4 is :
(1) Aniline (2) Benzoic acid
(3) Benzylamine (4) Benzaldehyde
12. The wavelength of UV light used in spectroscopy is :
(1) 100-200 nm (2) 400-800 nm
(3) 200-400 nm (4) 800-1200 nm
13. The radioactive isotope used in thyroid disorder diagnosis is :
(1) P-32 (2) C-14
(3) H-3 (4) I-131
14. The principle of conductometric titration is based on change in :
(1) Current (2) Conductance
(3) Resistance (4) Potential
15. The functional group present in an aldehyde is :
(1) $-\text{OH}$ (2) $-\text{CO}-$
(3) $-\text{COOH}$ (4) $-\text{CHO}$
16. The reaction of phenol with phthalic anhydride in presence of conc. H_2SO_4 gives :
(1) Fluorescein (2) Salicylic acid
(3) Aspirin (4) Phenolphthalein
17. The compound used as a primary standard for KMnO_4 standardization is :
(1) NaOH (2) NaCl
(3) HCl (4) Oxalic acid

18. The type of isomerism shown by $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]^+$ is :
(1) Linkage isomerism (2) Ionization isomerism
(3) Geometrical isomerism (4) Optical isomerism
19. The detector used in flame photometry is :
(1) Thermocouple (2) Bolometer
(3) Golay cell (4) Photomultiplier tube
20. The half-life of a first order reaction is :
(1) $2/k$ (2) $k/0.693$
(3) $1/k$ (4) $0.693/k$
21. The standard redox potential of hydrogen electrode is :
(1) +0.34 V (2) 1.00 V
(3) 0.00 V (4) -0.76 V
22. The pH of 0.1 M HCl solution is :
(1) 10 (2) 1
(3) 2 (4) 0.1
23. The crystal field stabilization energy (CFSE) for octahedral complex with d^6 configuration (low spin) is :
(1) $-1.2 \Delta_0$ (2) 0
(3) $-0.4 \Delta_0$ (4) $-2.4 \Delta_0 + 2P$
24. The Beer-Lambert law is expressed as :
(1) $A = \epsilon l/c$ (2) $A = c l/\epsilon$
(3) $A = \epsilon c l$ (4) $A = \epsilon / c l$
25. The functional group test for carboxylic acid is :
(1) Schiff's test (2) Sodium bicarbonate test
(3) 2,4-DNP test (4) Ceric ammonium nitrate test

26. The IUPAC name of $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CHO}$ is :
(1) Butanone (2) Butanoic acid
(3) Butanol (4) Butanal
27. The synthesis of aspirin from salicylic acid is an example of :
(1) Hydrolysis (2) Reduction
(3) Esterification (4) Acetylation
28. The retention time in GC depends on :
(1) pH of solution (2) Viscosity
(3) Color of compound (4) Boiling point of compound
29. The molecular ion peak in mass spectrum of methane (CH_4) appears at m/z :
(1) 14 (2) 16
(3) 15 (4) 17
30. The number of chiral centers in glucose is :
(1) 3 (2) 6
(3) 4 (4) 5
31. The Stokes' equation is used to determine :
(1) Surface tension (2) Particle size
(3) Viscosity (4) Sedimentation velocity
32. The angle of repose greater than 40° indicates :
(1) Fair flow (2) Good flow
(3) Excellent flow (4) Poor flow
33. The compression force in tablet manufacturing is measured by :
(1) Friabilator (2) Force transducer
(3) Disintegration tester (4) Monsanto tester

- 34.** The critical micelle concentration (CMC) is determined by :
- | | |
|---------------------|----------------------------|
| (1) UV spectroscopy | (2) Chromatography |
| (3) pH meter | (4) Surface tension method |
- 35.** Diabetes comes under :
- | | |
|----------------|----------------|
| (1) Schedule G | (2) Schedule H |
| (3) Schedule D | (4) Schedule J |
- 36.** Which sterilization method is used for vitamin B ?
- | | |
|-----------------|----------------------|
| (1) Autoclaving | (2) Heating |
| (3) Filtration | (4) All of the above |
- 37.** The instrument used to measure foam height is :
- | | |
|----------------------------|---------------------|
| (1) Ross-Miles foam tester | (2) Friabilator |
| (3) Brookfield viscometer | (4) Monsanto tester |
- 38.** The HLB of span 80 is :
- | | |
|---------|---------|
| (1) 1.2 | (2) 15 |
| (3) 9.8 | (4) 4.3 |
- 39.** The process of sterilization by dry heat is suitable for :
- | | |
|--------------------------|---------------------|
| (1) Plastic materials | (2) Rubber closures |
| (3) Antibiotic solutions | (4) Glassware |
- 40.** Example of Schedule G drug is :
- | | |
|----------------|---------------|
| (1) Metformin | (2) Enalapril |
| (3) Cefuroxime | (4) Barbitol |
- 41.** Pick false statement for the steps of coacervation micro-encapsulation methodology :
- | |
|--|
| (1) Formation of three immiscible phases |
| (2) Dissolution of coating |
| (3) Deposition of coating |
| (4) Rigidization of coating |

42. The dissolution medium for enteric coated tablets as per IP is :
(1) Distilled water (2) 0.1 N NaOH
(3) pH 1.2 HCl buffer (4) pH 6.8 phosphate buffer
43. The paddle apparatus used for dissolution test is specified in :
(1) USP Apparatus 3 (2) USP Apparatus 4
(3) USP Apparatus 1 (4) USP Apparatus 2
44. Which amino acid contain sulphur :
(1) Glycin (2) Alanine
(3) Methionine (4) Valine
45. The lag time in dissolution refers to :
(1) Time for 100% release (2) Time for first drug release
(3) Time for 50% release (4) Total dissolution time
46. Spurious drug comes under :
(1) Section 17 (2) Section 17A
(3) Section 17B (4) Section 3B
47. The viscosity of semisolids is measured by :
(1) Falling ball viscometer (2) Ubbelohde viscometer
(3) Ostwald viscometer (4) Brookfield viscometer
48. The type of emulsion that can be diluted with water is :
(1) Nanoemulsion (2) W/O emulsion
(3) Microemulsion (4) O/W emulsion
49. The preservative used in eye drops is :
(1) Cresol (2) Chloroform
(3) Phenol (4) Benzalkonium chloride
50. The Education Regulation is published in official gazette by :
(1) Ministry of Education (2) Central Government
(3) Drug Controller (4) President, Pharmacy Council of India

51. The tablet property measured by Roche Friabilator is :
(1) Disintegration time (2) Dissolution Rate
(3) Hardness (4) Friability
52. The process of removal of pyrogens from injection is :
(1) Disinfection (2) Depyrogenation
(3) Filtration (4) Sterilization
53. The sieve number indicating 250 μm aperture is :
(1) No. 100 (2) No. 80
(3) No. 44 (4) No. 60
54. 1 drop is equal to how much ml :
(1) 0.6 (2) 0.006
(3) 0.4 (4) 0.04
55. The instrument used for checking tablet thickness is :
(1) Monsanto tester (2) Friabilator
(3) Micrometer (4) Vernier caliper
56. The hydrophilic-lipophilic balance of polysorbate 80 is :
(1) 4.3 (2) 1.8
(3) 8.6 (4) 15
57. The type of capsule prepared by rotary die process is :
(1) Hard gelatin capsule (2) Soft gelatin capsule
(3) Sustained release capsule (4) Enteric capsule
58. The drying method suitable for thermolabile substances is :
(1) Tray drying (2) Spray drying
(3) Drum drying (4) Freeze drying
59. The uniformity of weight test for tablets is done on :
(1) 5 tablets (2) 10 tablets
(3) 50 tablets (4) 20 tablets

60. The parameter measured in disintegration test is :
(1) Time taken to dissolve (2) Time taken to harden
(3) Time taken to mix (4) Time taken to disintegrate
61. The biological source of Sennosides is :
(1) *Cassia angustifolia* (2) *Digitalis purpurea*
(3) *Atropa belladonna* (4) *Rauwolfia serpentina*
62. The phytoconstituent responsible for bitterness in gentian is :
(1) Quinine (2) Berberine
(3) Reserpine (4) Gentiopicrosin
63. The chemical test for alkaloids using potassium iodobismuthate is :
(1) Mayer's test (2) Wagner's test
(3) Hager's test (4) Dragendorff's test
64. The drug used as an expectorant is :
(1) Opium (2) Liquorice
(3) Digitalis (4) Cinchona
65. The resin containing benzoic acid and cinnamic acid is :
(1) Asafoetida (2) Guggul
(3) Colophony (4) Benzoin
66. The volatile oil of clove is standardized on the basis of :
(1) Cineole content (2) Thymol content
(3) Menthol content (4) Eugenol content
67. The method of adulteration in which exhausted drug is mixed is called :
(1) Admixture (2) Sophistication
(3) Substitution (4) Deterioration
68. The microscope used to measure particle size of starch grains is :
(1) Eye piece micrometer (2) Camera lucida
(3) Electron microscope (4) Stage micrometer

69. The drug containing phloroglucinol and isobutyric acid as chemical test is :
(1) Nux vomica (2) Digitalis
(3) Rauwolfia (4) Ashwagandha
70. The herb used as immunomodulator is :
(1) Neem (2) Ashwagandha
(3) Tulsi (4) Aloe
71. The plant tissue culture medium developed by Murashige and Skoog is :
(1) Gamborg's medium (2) White's medium
(3) Nitsch's medium (4) MS medium
72. The naturally occurring cardiac glycoside is :
(1) Reserpine (2) Digitoxin
(3) Morphine (4) Quinine
73. The drug used as a bitter tonic is :
(1) Clove (2) Cinnamon
(3) Gentian (4) Fennel
74. The method of extraction using supercritical fluid is :
(1) Maceration (2) Percolation
(3) Infusion (4) Supercritical fluid extraction
75. The gum obtained from Sterculia urens is :
(1) Karaya gum (2) Acacia
(3) Tragacanth (4) Guar gum
76. The normal resting membrane potential of a neuron is :
(1) -70 mV (2) -90 mV
(3) 0 mV (4) +30 mV

77. The cells responsible for antibody production are :
(1) T-lymphocytes (2) Neutrophils
(3) B-lymphocytes (4) Eosinophils
78. The hormone secreted by juxtaglomerular apparatus of kidney is :
(1) Aldosterone (2) ADH
(3) Erythropoietin (4) Renin
79. The second messenger for glucagon is :
(1) cGMP (2) IP_3
(3) Calcium (4) cAMP
80. The drug of choice for supraventricular tachycardia is :
(1) Lidocaine (2) Digoxin
(3) Adenosine (4) Amiodarone
81. The antidote for warfarin overdose is :
(1) Naloxone (2) Vitamin K
(3) Flumazenil (4) Protamine sulfate
82. The physiological function of cerebrospinal fluid (CSF) is :
(1) Oxygen transport (2) Digestion
(3) Excretion (4) Mechanical protection of brain
83. The drug that causes irreversible inhibition of cyclooxygenase is :
(1) Aspirin (2) Ibuprofen
(3) Paracetamol (4) Diclofenac
84. The organ of Corti is located in :
(1) Middle ear (2) Outer ear
(3) Eustachian tube (4) Inner ear

85. The oxygen carrying protein in muscle is :
(1) Hemoglobin (2) Cytochrome
(3) Myoglobin (4) Catalase
86. The drug used in myasthenia gravis is :
(1) Epinephrine (2) Atropine
(3) Propranolol (4) Neostigmine
87. The blood group with no antigens on RBC is :
(1) A (2) AB
(3) O (4) B
88. The drug of choice for anaphylactic shock is :
(1) Hydrocortisone (2) Diphenhydramine
(3) Dopamine (4) Epinephrine
89. The cells that secrete hydrochloric acid in stomach are :
(1) Chief cells (2) Goblet cells
(3) Mucous cells (4) Parietal cells
90. The mechanism of action of ACE inhibitors is :
(1) Blockade of AT1 receptors
(2) Calcium channel blockade
(3) Inhibition of angiotensin converting enzyme
(4) Beta receptor blockade
91. The normal cardiac cycle duration at 72 beats/min is :
(1) 1.2 sec (2) 0.8 sec
(3) 1 sec (4) 0.6 sec
92. The drug used in organophosphate poisoning as reactivator is :
(1) Physostigmine (2) Atropine
(3) Neostigmine (4) Pralidoxime
93. The pacemaker of the heart is :
(1) SA node (2) AV node
(3) Purkinje fibers (4) Bundle of His

94. The anticoagulant that acts by chelating calcium is :
(1) Warfarin (2) Aspirin
(3) Heparin (4) Sodium citrate
95. The function of renin is :
(1) Vasodilation
(2) Aldosterone secretion
(3) Conversion of angiotensinogen to angiotensin I
(4) Conversion of angiotensin I to II
96. The neurotransmitter at neuromuscular junction is :
(1) Acetylcholine (2) Norepinephrine
(3) Dopamine (4) Serotonin
97. The drug of choice for essential hypertension in pregnancy is :
(1) Captopril (2) Losartan
(3) Atenolol (4) Methyldopa
98. The volume of air exchanged during normal breathing is :
(1) Residual volume (2) Inspiratory reserve volume
(3) Vital capacity (4) Tidal volume
99. The drug used as a statin for hyperlipidemia is :
(1) Cholestyramine (2) Clofibrate
(3) Niacin (4) Atorvastatin
100. The function of ADH (vasopressin) is :
(1) Sodium reabsorption (2) Potassium excretion
(3) Calcium reabsorption (4) Water reabsorption from kidney

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SET-X

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24. The critical micelle concentration (CMC) is determined by :
(1) UV spectroscopy (2) Chromatography
(3) pH meter (4) Surface tension method
25. Diabetes comes under :
(1) Schedule G (2) Schedule H
(3) Schedule D (4) Schedule J
26. Which sterilization method is used for vitamin B ?
(1) Autoclaving (2) Heating
(3) Filtration (4) All of the above

27. The instrument used to measure foam height is :
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(3) Cefuroxime (4) Barbitol
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(1) 100-200 nm (2) 400-800 nm
(3) 200-400 nm (4) 800-1200 nm
33. The radioactive isotope used in thyroid disorder diagnosis is :
(1) P-32 (2) C-14
(3) H-3 (4) I-131
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(1) Current (2) Conductance
(3) Resistance (4) Potential

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37. The compound used as a primary standard for KMnO_4 standardization is :
(1) NaOH (2) NaCl
(3) HCl (4) Oxalic acid
38. The type of isomerism shown by $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]^+$ is :
(1) Linkage isomerism (2) Ionization isomerism
(3) Geometrical isomerism (4) Optical isomerism
39. The detector used in flame photometry is :
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(1) Palladium on carbon (2) Platinum oxide
(3) Raney nickel (4) All of the above

Total No. of Printed Pages : 13

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

C

PG-EE-July, 2026

SET-X

SUBJECT : Pharmaceutical Science 100007

Sr. No.

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

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

Name _____ Father's Name _____

Mother's Name _____ Date of Examination _____

(Signature of the Candidate)

(Signature of the Invigilator)

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

1. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Discrepancy, if any, should be immediately reported to the invigilator and should ask for replacement of Question booklet/OMR Answer Sheet. **Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after start of the examination.**
2. All questions are compulsory. There will be no negative marking. Each correct answer will be awarded one full mark.
3. For each question, four suggested answer (1), (2), (3), (4) are given. The candidate is to choose only one answer which he/she considers the correct or best one. If the candidate darkens more than one circle or cutting/over writing/erasing, then such answer(s) shall not be evaluated.
4. The candidate **MUST NOT** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the space provided in the end of question booklet. Answers **MUST NOT** be ticked in the Question booklet.
5. Use only Black or Blue **BALL POINT PEN** of good quality in the OMR Answer-Sheet.
6. 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.
7. Question Booklet(s) along with answer key(s) of all the A, B, C & D codes will be got uploaded on the university website 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.
8. The candidates must return the Question booklet as well as Original 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.

PG-EE-July, 2026/(Pharmaceutical Science)(SET-X)/(C)

SEAL

1. The product of reduction of benzamide with LiAlH_4 is :
(1) Aniline (2) Benzoic acid
(3) Benzylamine (4) Benzaldehyde
2. The wavelength of UV light used in spectroscopy is :
(1) 100-200 nm (2) 400-800 nm
(3) 200-400 nm (4) 800-1200 nm
3. The radioactive isotope used in thyroid disorder diagnosis is :
(1) P-32 (2) C-14
(3) H-3 (4) I-131
4. The principle of conductometric titration is based on change in :
(1) Current (2) Conductance
(3) Resistance (4) Potential
5. The functional group present in an aldehyde is :
(1) $-\text{OH}$ (2) $-\text{CO}-$
(3) $-\text{COOH}$ (4) $-\text{CHO}$
6. The reaction of phenol with phthalic anhydride in presence of conc. H_2SO_4 gives :
(1) Fluorescein (2) Salicylic acid
(3) Aspirin (4) Phenolphthalein
7. The compound used as a primary standard for KMnO_4 standardization is :
(1) NaOH (2) NaCl
(3) HCl (4) Oxalic acid
8. The type of isomerism shown by $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]^+$ is :
(1) Linkage isomerism (2) Ionization isomerism
(3) Geometrical isomerism (4) Optical isomerism

9. The detector used in flame photometry is :
(1) Thermocouple (2) Bolometer
(3) Golay cell (4) Photomultiplier tube
10. The half-life of a first order reaction is :
(1) $2/k$ (2) $k/0.693$
(3) $1/k$ (4) $0.693/k$
11. The normal cardiac cycle duration at 72 beats/min is :
(1) 1.2 sec (2) 0.8 sec
(3) 1 sec (4) 0.6 sec
12. The drug used in organophosphate poisoning as reactivator is :
(1) Physostigmine (2) Atropine
(3) Neostigmine (4) Pralidoxime
13. The pacemaker of the heart is :
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21. The plant tissue culture medium developed by Murashige and Skoog is :
 - (1) Gamborg's medium
 - (2) White's medium
 - (3) Nitsch's medium
 - (4) MS medium
22. The naturally occurring cardiac glycoside is :
 - (1) Reserpine
 - (2) Digitoxin
 - (3) Morphine
 - (4) Quinine
23. The drug used as a bitter tonic is :
 - (1) Clove
 - (2) Cinnamon
 - (3) Gentian
 - (4) Fennel
24. The method of extraction using supercritical fluid is :
 - (1) Maceration
 - (2) Percolation
 - (3) Infusion
 - (4) Supercritical fluid extraction
25. The gum obtained from Sterculia urens is :
 - (1) Karaya gum
 - (2) Acacia
 - (3) Tragacanth
 - (4) Guar gum

26. The normal resting membrane potential of a neuron is :
 (1) -70 mV (2) -90 mV
 (3) 0 mV (4) $+30$ mV
27. The cells responsible for antibody production are :
 (1) T-lymphocytes (2) Neutrophils
 (3) B-lymphocytes (4) Eosinophils
28. The hormone secreted by juxtaglomerular apparatus of kidney is :
 (1) Aldosterone (2) ADH
 (3) Erythropoietin (4) Renin
29. The second messenger for glucagon is :
 (1) cGMP (2) IP_3
 (3) Calcium (4) cAMP
30. The drug of choice for supraventricular tachycardia is :
 (1) Lidocaine (2) Digoxin
 (3) Adenosine (4) Amiodarone
31. The tablet property measured by Roche Friabilator is :
 (1) Disintegration time (2) Dissolution Rate
 (3) Hardness (4) Friability
32. The process of removal of pyrogens from injection is :
 (1) Disinfection (2) Depyrogenation
 (3) Filtration (4) Sterilization
33. The sieve number indicating $250\text{ }\mu\text{m}$ aperture is :
 (1) No. 100 (2) No. 80
 (3) No. 44 (4) No. 60
34. 1 drop is equal to how much ml :
 (1) 0.6 (2) 0.006
 (3) 0.4 (4) 0.04

35. The instrument used for checking tablet thickness is :
(1) Monsanto tester (2) Friabilator
(3) Micrometer (4) Vernier caliper
36. The hydrophilic-lipophilic balance of polysorbate 80 is :
(1) 4.3 (2) 1.8
(3) 8.6 (4) 15
37. The type of capsule prepared by rotary die process is :
(1) Hard gelatin capsule (2) Soft gelatin capsule
(3) Sustained release capsule (4) Enteric capsule
38. The drying method suitable for thermolabile substances is :
(1) Tray drying (2) Spray drying
(3) Drum drying (4) Freeze drying
39. The uniformity of weight test for tablets is done on :
(1) 5 tablets (2) 10 tablets
(3) 50 tablets (4) 20 tablets
40. The parameter measured in disintegration test is :
(1) Time taken to dissolve (2) Time taken to harden
(3) Time taken to mix (4) Time taken to disintegrate
41. The Stokes' equation is used to determine :
(1) Surface tension (2) Particle size
(3) Viscosity (4) Sedimentation velocity
42. The angle of repose greater than 40° indicates :
(1) Fair flow (2) Good flow
(3) Excellent flow (4) Poor flow
43. The compression force in tablet manufacturing is measured by :
(1) Friabilator (2) Force transducer
(3) Disintegration tester (4) Monsanto tester

44. The critical micelle concentration (CMC) is determined by :
 (1) UV spectroscopy (2) Chromatography
 (3) pH meter (4) Surface tension method
45. Diabetes comes under :
 (1) Schedule G (2) Schedule H
 (3) Schedule D (4) Schedule J
46. Which sterilization method is used for vitamin B ?
 (1) Autoclaving (2) Heating
 (3) Filtration (4) All of the above
47. The instrument used to measure foam height is :
 (1) Ross-Miles foam tester (2) Friabilator
 (3) Brookfield viscometer (4) Monsanto tester
48. The HLB of span 80 is :
 (1) 1.2 (2) 15
 (3) 9.8 (4) 4.3
49. The process of sterilization by dry heat is suitable for :
 (1) Plastic materials (2) Rubber closures
 (3) Antibiotic solutions (4) Glassware
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 (3) Dopamine (4) Epinephrine
99. The cells that secrete hydrochloric acid in stomach are :
 (1) Chief cells (2) Goblet cells
 (3) Mucous cells (4) Parietal cells
100. The mechanism of action of ACE inhibitors is :
 (1) Blockade of AT1 receptors
 (2) Calcium channel blockade
 (3) Inhibition of angiotensin converting enzyme
 (4) Beta receptor blockade

Total No. of Printed Pages : 13

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

D

PG-EE-July, 2026

SET-X

SUBJECT : Pharmaceutical Science 100008

Sr. No.

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

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

Name _____ Father's Name _____

Mother's Name _____ Date of Examination _____

(Signature of the Candidate)

(Signature of the Invigilator)

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

1. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Discrepancy, if any, should be immediately reported to the invigilator and should ask for replacement of Question booklet/OMR Answer Sheet. **Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after start of the examination.**
2. All questions are compulsory. There will be no negative marking. Each correct answer will be awarded one full mark.
3. For each question, four suggested answer (1), (2), (3), (4) are given. The candidate is to choose only one answer which he/she considers the correct or best one. If the candidate darkens more than one circle or cutting/over writing/erasing, then such answer(s) shall not be evaluated.
4. The candidate **MUST NOT** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the space provided in the end of question booklet. Answers **MUST NOT** be ticked in the Question booklet.
5. Use only Black or Blue **BALL POINT PEN** of good quality in the OMR Answer-Sheet.
6. 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.
7. Question Booklet(s) along with answer key(s) of all the A, B, C & D codes will be got uploaded on the university website 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.
8. The candidates must return the Question booklet as well as Original 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.

PG-EE-July, 2026/(Pharmaceutical Science)(SET-X)/(D)

SEAL

1. Pick false statement for the steps of coacervation micro-encapsulation methodology :
 - (1) Formation of three immiscible phases
 - (2) Dissolution of coating
 - (3) Deposition of coating
 - (4) Rigidization of coating
2. The dissolution medium for enteric coated tablets as per IP is :
 - (1) Distilled water
 - (2) 0.1 N NaOH
 - (3) pH 1.2 HCl buffer
 - (4) pH 6.8 phosphate buffer
3. The paddle apparatus used for dissolution test is specified in :
 - (1) USP Apparatus 3
 - (2) USP Apparatus 4
 - (3) USP Apparatus 1
 - (4) USP Apparatus 2
4. Which amino acid contain sulphur :
 - (1) Glycin
 - (2) Alanine
 - (3) Methionine
 - (4) Valine
5. The lag time in dissolution refers to :
 - (1) Time for 100% release
 - (2) Time for first drug release
 - (3) Time for 50% release
 - (4) Total dissolution time
6. Spurious drug comes under :
 - (1) Section 17
 - (2) Section 17A
 - (3) Section 17B
 - (4) Section 3B
7. The viscosity of semisolids is measured by :
 - (1) Falling ball viscometer
 - (2) Ubbelohde viscometer
 - (3) Ostwald viscometer
 - (4) Brookfield viscometer
8. The type of emulsion that can be diluted with water is :
 - (1) Nanoemulsion
 - (2) W/O emulsion
 - (3) Microemulsion
 - (4) O/W emulsion

9. The preservative used in eye drops is :
(1) Cresol (2) Chloroform
(3) Phenol (4) Benzalkonium chloride
10. The Education Regulation is published in official gazette by :
(1) Ministry of Education (2) Central Government
(3) Drug Controller (4) President, Pharmacy Council of India
11. The standard redox potential of hydrogen electrode is :
(1) +0.34 V (2) 1.00 V
(3) 0.00 V (4) -0.76 V
12. The pH of 0.1 M HCl solution is :
(1) 10 (2) 1
(3) 2 (4) 0.1
13. The crystal field stabilization energy (CFSE) for octahedral complex with d^6 configuration (low spin) is :
(1) $-1.2 \Delta_0$ (2) 0
(3) $-0.4 \Delta_0$ (4) $-2.4 \Delta_0 + 2P$
14. The Beer-Lambert law is expressed as :
(1) $A = \epsilon l/c$ (2) $A = c l/\epsilon$
(3) $A = \epsilon c l$ (4) $A = \epsilon / c l$
15. The functional group test for carboxylic acid is :
(1) Schiff's test (2) Sodium bicarbonate test
(3) 2,4-DNP test (4) Ceric ammonium nitrate test
16. The IUPAC name of $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CHO}$ is :
(1) Butanone (2) Butanoic acid
(3) Butanol (4) Butanal
17. The synthesis of aspirin from salicylic acid is an example of :
(1) Hydrolysis (2) Reduction
(3) Esterification (4) Acetylation

18. The retention time in GC depends on :
(1) pH of solution (2) Viscosity
(3) Color of compound (4) Boiling point of compound
19. The molecular ion peak in mass spectrum of methane (CH_4) appears at m/z :
(1) 14 (2) 16
(3) 15 (4) 17
20. The number of chiral centers in glucose is :
(1) 3 (2) 6
(3) 4 (4) 5
21. The number of σ and π bonds in benzene molecule respectively are :
(1) 9 σ and 3 π (2) 6 σ and 6 π
(3) 6 σ and 3 π (4) 12 σ and 3 π
22. In the Lassaigne's test for nitrogen, the Prussian blue color is due to formation of :
(1) $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ (2) $\text{Na}_4[\text{Fe}(\text{CN})_6]$
(3) $\text{Fe}(\text{CN})_2$ (4) $\text{Fe}_3[\text{Fe}(\text{CN})_6]_2$
23. The chromophore in acetophenone is :
(1) Hydroxyl group
(2) Carbonyl group conjugated with benzene ring
(3) Methyl group
(4) Isolated carbonyl
24. The chemical shift of TMS in proton NMR is taken as :
(1) 1 ppm (2) 7.2 ppm
(3) 0 ppm (4) 10 ppm
25. The indicator used in Fajans method is :
(1) Methyl orange (2) Eriochrome Black T
(3) Phenolphthalein (4) Fluorescein
26. The compound that gives positive iodoform test is :
(1) Methanol (2) Propanol
(3) Ethanol (4) Butanol

27. In IR spectroscopy, the C = O stretching frequency of a ketone appears around :
(1) 1600 cm^{-1} (2) 1200 cm^{-1}
(3) 3300 cm^{-1} (4) 1715 cm^{-1}
28. The number of optical isomers for tartaric acid is :
(1) 1 (2) 3
(3) 2 (4) 4
29. The reagent used in Benzoin condensation is :
(1) Conc. H_2SO_4 (2) Pyridine
(3) Sodium hydroxide (4) Thiamine hydrochloride
30. The catalyst used in hydrogenation of alkenes is :
(1) Palladium on carbon (2) Platinum oxide
(3) Raney nickel (4) All of the above
31. The normal cardiac cycle duration at 72 beats/min is :
(1) 1.2 sec (2) 0.8 sec
(3) 1 sec (4) 0.6 sec
32. The drug used in organophosphate poisoning as reactivator is :
(1) Physostigmine (2) Atropine
(3) Neostigmine (4) Pralidoxime
33. The pacemaker of the heart is :
(1) SA node (2) AV node
(3) Purkinje fibers (4) Bundle of His
34. The anticoagulant that acts by chelating calcium is :
(1) Warfarin (2) Aspirin
(3) Heparin (4) Sodium citrate
35. The function of renin is :
(1) Vasodilation
(2) Aldosterone secretion
(3) Conversion of angiotensinogen to angiotensin I
(4) Conversion of angiotensin I to II

36. The neurotransmitter at neuromuscular junction is :
(1) Acetylcholine (2) Norepinephrine
(3) Dopamine (4) Serotonin
37. The drug of choice for essential hypertension in pregnancy is :
(1) Captopril (2) Losartan
(3) Atenolol (4) Methyldopa
38. The volume of air exchanged during normal breathing is :
(1) Residual volume (2) Inspiratory reserve volume
(3) Vital capacity (4) Tidal volume
39. The drug used as a statin for hyperlipidemia is :
(1) Cholestyramine (2) Clofibrate
(3) Niacin (4) Atorvastatin
40. The function of ADH (vasopressin) is :
(1) Sodium reabsorption (2) Potassium excretion
(3) Calcium reabsorption (4) Water reabsorption from kidney
41. The biological source of Sennosides is :
(1) Cassia angustifolia (2) Digitalis purpurea
(3) Atropa belladonna (4) Rauwolfia serpentina
42. The phytoconstituent responsible for bitterness in gentian is :
(1) Quinine (2) Berberine
(3) Reserpine (4) Gentiopicrosin
43. The chemical test for alkaloids using potassium iodobismuthate is :
(1) Mayer's test (2) Wagner's test
(3) Hager's test (4) Dragendorff's test
44. The drug used as an expectorant is :
(1) Opium (2) Liquorice
(3) Digitalis (4) Cinchona

45. The resin containing benzoic acid and cinnamic acid is :
(1) Asafoetida (2) Guggul
(3) Colophony (4) Benzoin
46. The volatile oil of clove is standardized on the basis of :
(1) Cineole content (2) Thymol content
(3) Menthol content (4) Eugenol content
47. The method of adulteration in which exhausted drug is mixed is called :
(1) Admixture (2) Sophistication
(3) Substitution (4) Deterioration
48. The microscope used to measure particle size of starch grains is :
(1) Eye piece micrometer (2) Camera lucida
(3) Electron microscope (4) Stage micrometer
49. The drug containing phloroglucinol and isobutyric acid as chemical test is :
(1) Nux vomica (2) Digitalis
(3) Rauwolfia (4) Ashwagandha
50. The herb used as immunomodulator is :
(1) Neem (2) Ashwagandha
(3) Tulsi (4) Aloe
51. The Stokes' equation is used to determine :
(1) Surface tension (2) Particle size
(3) Viscosity (4) Sedimentation velocity
52. The angle of repose greater than 40° indicates :
(1) Fair flow (2) Good flow
(3) Excellent flow (4) Poor flow
53. The compression force in tablet manufacturing is measured by :
(1) Friabilator (2) Force transducer
(3) Disintegration tester (4) Monsanto tester

54. The critical micelle concentration (CMC) is determined by :
(1) UV spectroscopy (2) Chromatography
(3) pH meter (4) Surface tension method
55. Diabetes comes under :
(1) Schedule G (2) Schedule H
(3) Schedule D (4) Schedule J
56. Which sterilization method is used for vitamin B ?
(1) Autoclaving (2) Heating
(3) Filtration (4) All of the above
57. The instrument used to measure foam height is :
(1) Ross-Miles foam tester (2) Friabilator
(3) Brookfield viscometer (4) Monsanto tester
58. The HLB of span 80 is :
(1) 1.2 (2) 15
(3) 9.8 (4) 4.3
59. The process of sterilization by dry heat is suitable for :
(1) Plastic materials (2) Rubber closures
(3) Antibiotic solutions (4) Glassware
60. Example of Schedule G drug is :
(1) Metformin (2) Enalapril
(3) Cefuroxime (4) Barbitol
61. The plant tissue culture medium developed by Murashige and Skoog is :
(1) Gamborg's medium (2) White's medium
(3) Nitsch's medium (4) MS medium
62. The naturally occurring cardiac glycoside is :
(1) Reserpine (2) Digitoxin
(3) Morphine (4) Quinine

63. The drug used as a bitter tonic is :
(1) Clove (2) Cinnamon
(3) Gentian (4) Fennel
64. The method of extraction using supercritical fluid is :
(1) Maceration (2) Percolation
(3) Infusion (4) Supercritical fluid extraction
65. The gum obtained from *Sterculia urens* is :
(1) Karaya gum (2) Acacia
(3) Tragacanth (4) Guar gum
66. The normal resting membrane potential of a neuron is :
(1) -70 mV (2) -90 mV
(3) 0 mV (4) +30 mV
67. The cells responsible for antibody production are :
(1) T-lymphocytes (2) Neutrophils
(3) B-lymphocytes (4) Eosinophils
68. The hormone secreted by juxtaglomerular apparatus of kidney is :
(1) Aldosterone (2) ADH
(3) Erythropoietin (4) Renin
69. The second messenger for glucagon is :
(1) cGMP (2) IP_3
(3) Calcium (4) cAMP
70. The drug of choice for supraventricular tachycardia is :
(1) Lidocaine (2) Digoxin
(3) Adenosine (4) Amiodarone

71. The antidote for warfarin overdose is :
(1) Naloxone (2) Vitamin K
(3) Flumazenil (4) Protamine sulfate
72. The physiological function of cerebrospinal fluid (CSF) is :
(1) Oxygen transport (2) Digestion
(3) Excretion (4) Mechanical protection of brain
73. The drug that causes irreversible inhibition of cyclooxygenase is :
(1) Aspirin (2) Ibuprofen
(3) Paracetamol (4) Diclofenac
74. The organ of Corti is located in :
(1) Middle ear (2) Outer ear
(3) Eustachian tube (4) Inner ear
75. The oxygen carrying protein in muscle is :
(1) Hemoglobin (2) Cytochrome
(3) Myoglobin (4) Catalase
76. The drug used in myasthenia gravis is :
(1) Epinephrine (2) Atropine
(3) Propranolol (4) Neostigmine
77. The blood group with no antigens on RBC is :
(1) A (2) AB
(3) O (4) B
78. The drug of choice for anaphylactic shock is :
(1) Hydrocortisone (2) Diphenhydramine
(3) Dopamine (4) Epinephrine
79. The cells that secrete hydrochloric acid in stomach are :
(1) Chief cells (2) Goblet cells
(3) Mucous cells (4) Parietal cells

80. The mechanism of action of ACE inhibitors is :
(1) Blockade of AT1 receptors
(2) Calcium channel blockade
(3) Inhibition of angiotensin converting enzyme
(4) Beta receptor blockade
81. The product of reduction of benzamide with LiAlH_4 is :
(1) Aniline
(2) Benzoic acid
(3) Benzylamine
(4) Benzaldehyde
82. The wavelength of UV light used in spectroscopy is :
(1) 100-200 nm
(2) 400-800 nm
(3) 200-400 nm
(4) 800-1200 nm
83. The radioactive isotope used in thyroid disorder diagnosis is :
(1) P-32
(2) C-14
(3) H-3
(4) I-131
84. The principle of conductometric titration is based on change in :
(1) Current
(2) Conductance
(3) Resistance
(4) Potential
85. The functional group present in an aldehyde is :
(1) $-\text{OH}$
(2) $-\text{CO}-$
(3) $-\text{COOH}$
(4) $-\text{CHO}$
86. The reaction of phenol with phthalic anhydride in presence of conc. H_2SO_4 gives :
(1) Fluorescein
(2) Salicylic acid
(3) Aspirin
(4) Phenolphthalein
87. The compound used as a primary standard for KMnO_4 standardization is :
(1) NaOH
(2) NaCl
(3) HCl
(4) Oxalic acid

88. The type of isomerism shown by $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]^+$ is :
(1) Linkage isomerism (2) Ionization isomerism
(3) Geometrical isomerism (4) Optical isomerism
89. The detector used in flame photometry is :
(1) Thermocouple (2) Bolometer
(3) Golay cell (4) Photomultiplier tube
90. The half-life of a first order reaction is :
(1) $2/k$ (2) $k/0.693$
(3) $1/k$ (4) $0.693/k$
91. The tablet property measured by Roche Friabilator is :
(1) Disintegration time (2) Dissolution Rate
(3) Hardness (4) Friability
92. The process of removal of pyrogens from injection is :
(1) Disinfection (2) Depyrogenation
(3) Filtration (4) Sterilization
93. The sieve number indicating $250\ \mu\text{m}$ aperture is :
(1) No. 100 (2) No. 80
(3) No. 44 (4) No. 60
94. 1 drop is equal to how much ml :
(1) 0.6 (2) 0.006
(3) 0.4 (4) 0.04
95. The instrument used for checking tablet thickness is :
(1) Monsanto tester (2) Friabilator
(3) Micrometer (4) Vernier caliper
96. The hydrophilic-lipophilic balance of polysorbate 80 is :
(1) 4.3 (2) 1.8
(3) 8.6 (4) 15

97. The type of capsule prepared by rotary die process is :
(1) Hard gelatin capsule (2) Soft gelatin capsule
(3) Sustained release capsule (4) Enteric capsule
98. The drying method suitable for thermolabile substances is :
(1) Tray drying (2) Spray drying
(3) Drum drying (4) Freeze drying
99. The uniformity of weight test for tablets is done on :
(1) 5 tablets (2) 10 tablets
(3) 50 tablets (4) 20 tablets
100. The parameter measured in disintegration test is :
(1) Time taken to dissolve (2) Time taken to harden
(3) Time taken to mix (4) Time taken to disintegrate

Answer key of M.Pharm. under Department of Pharmaceutical Sciences entrance exam dated 17.07.2026

Q. NO.	A	B	C	D
1	4	4	3	2
2	1	2	3	4
3	2	3	4	4
4	3	4	2	3
5	4	1	4	2
6	3	1	4	3
7	4	3	4	4
8	2	4	3	4
9	4	4	4	4
10	1	3	4	2
11	3	4	2	3
12	3	2	4	2
13	4	4	1	4
14	2	4	4	3
15	4	4	3	2
16	4	4	1	4
17	4	2	4	4
18	3	4	4	4
19	4	4	4	2
20	4	4	4	3
21	3	4	4	4
22	2	4	2	1
23	4	2	3	2
24	3	4	4	3
25	2	4	1	4
26	4	3	1	3
27	4	1	3	4
28	4	4	4	2
29	2	4	4	4
30	3	1	3	1
31	4	3	4	2
32	4	3	2	4
33	2	4	4	1
34	4	2	4	4
35	4	4	4	3
36	3	4	4	1
37	1	4	2	4
38	4	3	4	4
39	4	4	4	4
40	1	4	4	4
41	2	2	4	1
42	4	4	4	4
43	4	1	2	4
44	3	4	4	2
45	2	3	4	4
46	3	1	3	4
47	4	4	1	3
48	4	4	4	1
49	4	4	4	1
50	2	4	1	2

Anusadh
17/7/26

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Rakesh
17.7.26

Answer key of M.Pharm. under Department of Pharmaceutical Sciences entrance exam dated 17.07.2026

Q. NO.	A	B	C	D
51	4	1	3	4
52	2	4	2	4
53	4	4	4	2
54	4	2	3	4
55	4	4	2	4
56	4	4	4	3
57	2	3	4	1
58	4	1	4	4
59	4	1	2	4
60	4	2	3	1
61	1	2	2	4
62	4	4	4	2
63	4	1	4	3
64	2	4	3	4
65	4	3	2	1
66	4	4	3	1
67	3	3	4	3
68	1	4	4	4
69	1	4	4	4
70	2	3	2	3
71	4	2	1	2
72	2	4	4	4
73	3	4	4	1
74	4	3	2	4
75	1	2	4	3
76	1	3	4	4
77	3	4	3	3
78	4	4	1	4
79	4	4	1	4
80	3	2	2	3
81	2	3	4	3
82	4	2	1	3
83	1	4	2	4
84	4	3	3	2
85	3	2	4	4
86	4	4	3	4
87	3	4	4	4
88	4	4	2	3
89	4	2	4	4
90	3	3	1	4
91	2	4	2	4
92	4	1	4	2
93	1	2	1	4
94	4	3	4	4
95	3	4	3	4
96	1	3	4	4
97	4	4	3	2
98	4	2	4	4
99	4	4	4	4
100	4	1	3	4

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Alankar

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