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HIPS

Booklet Series

A

Register Number

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2009

PHARMACY / PHARMACEUTICAL SCIENCES

Time Allowed : 3 Hours]

[Maximum Marks : 300

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS

1. This Booklet has a cover (this page) which should not be opened till the invigilator gives signal to open it at the commencement of the examination. As soon as the signal is received you should tear the right side of the booklet cover carefully to open the booklet. Then proceed to answer the questions.
2. This Question Booklet contains **200** questions.
3. Answer **all** questions.
4. **All** questions carry equal marks.
5. The Test Booklet is printed in *four* series e.g. A B C or D (See Top left side of this page). The candidate has to indicate in the space provided in the Answer Sheet the series of the booklet. For example, if the candidate gets A series booklet, he/she has to indicate in the side 2 of the Answer Sheet with Blue or Black Ink Ball point pen as follows :

A [B] [C] [D]

6. You must write your Register Number in the space provided on the top right side of this page. Do not write anything else on the Question Booklet.
7. An Answer Sheet will be supplied to you separately by the Invigilator to mark the answers. You must write your Name, Register No. and other particulars on side 1 of the Answer Sheet provided, failing which your Answer Sheet will not be evaluated.
8. You will also encode your Register Number, Subject Code etc., with Blue or Black Ink Ball point pen in the space provided on the side 2 of the Answer Sheet. If you do not encode properly or fail to encode the above information, your Answer Sheet will not be evaluated.
9. Each question comprises *four* responses (A), (B), (C) and (D). You are to select **ONLY ONE** correct response and mark in your Answer Sheet. In case you feel that there are more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.
10. In the Answer Sheet there are **four** brackets [A] [B] [C] and [D] against each question. To answer the questions you are to mark with Ball point pen **ONLY ONE** bracket of your choice for each question. Select one response for each question in the Question Booklet and mark in the Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. e.g. If for any item, (B) is the correct answer, you have to mark as follows :

[A] [C] [D]

11. You should not remove or tear off any sheet from this Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the examination. After the examination is concluded, you must hand over your Answer Sheet to the Invigilator. You are allowed to take the Question Booklet with you only after the Examination is over.
12. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.
13. Do not tick-mark or mark the answers in the Question Booklet.

x **901**

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[Turn over

DO NOT TEAR THIS COVER OF THE QUESTION BOOKLET UNTIL YOU ARE ASKED TO DO SO

1. Which of the following trademarked sustained release systems are based on encapsulated drug particles that will dissolve at various rates ?

- I. Sequels
- II. Spansules
- III. Extentabs.

Of these

- A) I only
- B) III only
- C) I and II
- D) I, II and III.

2. Compartmental models are often used to illustrate the various principles of pharmacokinetics. A compartment is best defined as

- A) any anatomic entity that is capable of absorbing drug
- B) a kinetically distinguishable pool of drug
- C) specific body organs in tissues that can be assayed for drug
- D) any body fluid such as blood in urine that may contain drug.

3. Dimethyl sulphoxide is commonly used as an excipient in transdermal patches as

- A) adhesive
- B) permeation enhancer of lipophilic drugs
- C) permeation enhancer of hydrophilic drugs
- D) release liner.

4. Ideal conditions for effective transdermal drug delivery would include molecular weight of and pH of for the saturated aqueous solution of the drug.

- A) < 500 Da, 1 - 5
- B) > 500 Da, 1 - 5
- C) < 500 Da, 5 - 9
- D) > 500 Da, 5 - 9.

5. All of the following drugs are believed to undergo significant first-pass hepatic biotransformation, except

- A) phenytoin
- B) lidocaine
- C) morphine
- D) nitroglycerine.

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6. Agglomeration in aerosols can be reduced by including
- A) anionic surfactants with HLB greater than 10
 - B) cationic surfactants with HLB less than 10
 - C) non-ionic surfactants with HLB greater than 10
 - D) non-ionic surfactants with HLB less than 10.
7. In a suspension, open network aggregate or floccule tends to
- A) settle quickly and cannot be easily redispersed
 - B) settle slowly and can be easily redispersed
 - C) settle quickly and can be easily redispersed
 - D) settle slowly and cannot be easily redispersed.
8. The particle size range of nano-particles is
- A) 1 nm — 1 μ m
 - B) 1 nm — 1000 nm
 - C) 1nm — 100 nm
 - D) 0.5 μ m — 1 nm.
9. Transdermal drug delivery systems contain drugs meant for
- A) local action
 - B) systemic action
 - C) both (A) and (B)
 - D) none of these.
10. Which one of the following per oral dosage forms is likely to exhibit the longest lag time ?
- A) Delayed release tablet
 - B) Elbdr
 - C) Enteric coated tablet
 - D) Sustained release capsule.
11. The equation that describes the process of 'Passive Transport' is
- A) Noyes-Whitney equation
 - B) Stokes law
 - C) Flick's law
 - D) Hofmeister rule.
12. The gelatin used in the manufacture of capsules is obtained from collagenous material by
- A) hydrolysis
 - B) decarboxylation
 - C) acetylation
 - D) conjugation.

13. Opalux is
- A) colour concentrate for fluidized bed coating
 - B) colour concentrate for film coating
 - C) complete colour concentrate for enteric coating
 - D) colour concentrate for sugar coating.
14. Creams are
- A) emulsions
 - B) gels
 - C) jellies
 - D) magmas.
15. Dissolution tests for tablets are done to measure indirectly
- A) hardness
 - B) bioavailability
 - C) solubility
 - D) friability.
16. Trichloromonofluoromethane is numerically designated as
- A) 12
 - B) 11
 - C) 114
 - D) 22.
17. Sealing in sugar coating is done
- A) to release drug in the intestine
 - B) to sustain release of the drug
 - C) to round the edges of tablet core
 - D) to prevent moisture penetration into tablet core.
18. is used to remove the Pyrogen during the preparation of water for injection.
- A) Membrane filter
 - B) Condenser
 - C) Still head
 - D) Filter head.
19. The type of official eye ointment base is
- A) hydrocarbon
 - B) absorption
 - C) water miscible
 - D) water soluble.

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34. As per GMP, during tablet compression, in-process control should be done at regular intervals of
- A) not more than 45 minutes B) not more than one hour
C) not more than 30 minutes D) every one hour.
35. Drug (Price Control) Order came into force in the year
- A) 1979 B) 1955
C) 1960 D) 1987.
36. Equipment recommended for the manufacture of powders come under
- A) Schedule H B) Schedule M
C) Schedule N D) Schedule X.
37. Magic remedies include
- A) Talismans B) Mantras
C) Kavachas D) all of these.
38. Spurious drugs mean
- A) imitations B) substitutes
C) resembling other drugs D) all of these.
39. GMP for Ayurvedic, Siddha and Unani medicines are covered by
- A) Schedule U B) Schedule T
C) Schedule W D) Schedule M.
40. Protoplasmic plant tissue culture method was introduced in 1960 by
- A) Cocking B) Skoog & Miller
C) Gamborg and Neabors D) Carlson.

69. The constituents of Karl Fischer reagent are
- A) SO_3 , solution of iodine, anhydrous pyridine, ethanol
 - B) SO_2 , solution of iodine, anhydrous pyridine, acetone
 - C) SO_3 , solution of iodine, anhydrous pyridine, anhydrous methanol
 - D) SO_2 , solution of iodine, anhydrous pyridine, anhydrous methanol.
70. In electron capture detector, may be used as a carrier gas for compounds of high electron affinity.
- A) Nitrogen
 - B) Argon
 - C) Hydrogen
 - D) Carbon dioxide.
71. Which of the following statements about ISO is incorrect ?
- A) ISO certifies organisations which apply for ISO 9001 compliance.
 - B) ISO 9000 is not a prescriptive standard for quality.
 - C) ISO 9000 is a process oriented rather than result oriented standard.
 - D) ISO 9000 does not provide industry specific performance requirements.
72. The composition of the Barium sulphate reagent used in the limit test for sulphates is
- A) Barium sulphate, Sulphate free alcohol and Ferrous sulphate
 - B) Barium chloride, alcohol and Potassium chloride
 - C) Barium sulphate, alcohol and Potassium chloride
 - D) Barium chloride, Sulphate free alcohol and Potassium sulphate.
73. Katharometers & Bolometers are different types of
- A) pumps
 - B) detectors
 - C) monochromators
 - D) recorders.

101. The antiarrhythmic drug quinidine is

- A) (+) stereoisomer of quinine
- B) (-) stereoisomer of quinine
- C) (+) racemic mixture of quinine
- D) none of these.

102. The IUPAC nomenclature of Piroxicam is

- A) 2H-1, 2-benzothiazine-3-carboxamide, 4 hydroxy 2-methyl-N-pyridinyl-, 1, 1-dioxide
- B) 2-naphthalene acetic acid, (+) 6 methoxy- α -methyl
- C) Benzene acetic acid (\pm) α -methyl-4-(2-methyl propyl)
- D) Benzoic acid, 2-[(2, 6-dichloro-3- methyl phenyl) amino]

103. Prazepam differs in structure from Diazepam by

- A) N-methyl group
- B) N-propyl group
- C) N-cyclo propyl methyl group
- D) N-cyclo propyl group.

104. Some psychoactive phenothiazines listed below have the following side chains at position 10, which are given in 1 to 4. Match them correctly :

- | | | |
|---------------------|----|---|
| a) Chlorpromazine | 1. | 3-[4 methyl piperazine 1-yl] propyl |
| b) Prochlorperazine | 2. | 2-(1 methyl piperide 2-yl) ethyl |
| c) Thioridazine | 3. | 3-[4- (2 hydroxy ethyl)
piperazine 1-V] propyl |
| d) Perphenazine | 4. | Dimethyl aminopropyl. |

Codes :

- | | a | b | c | d |
|----|---|---|---|----|
| A) | 4 | 1 | 2 | 3 |
| B) | 1 | 2 | 1 | 3 |
| C) | 2 | 3 | 4 | 2 |
| D) | 3 | 4 | 3 | 1. |

105. From the given pairs of diuretics in which pair both the drugs do not require the presence of aldosterone to produce diuresis ?
- A) Mannitol and Spiranolactone
 - B) Spiranolactone and Triamterene
 - C) Triamterene and Amiloride
 - D) Spiranolactone and Amiloride.
106. The diuretic that is natriuretic, chloruretic, saluretic and antikaliuretic, is
- A) Spiranolactone
 - B) Furosemide
 - C) Ethacrynic acid
 - D) Acetazolamide.
107. Of the given pairs of antihistamines, the pair in which both are, 'dual-acting' antihistamines is
- A) Cetirizine and Cromolyn sodium
 - B) Azelastine and Cetirizine
 - C) Azelastine and Ketotifen
 - D) Ketotifen and Cromolyn sodium.
108. Diazoxide and Minoxidil can be described as
- A) Potassium channel openers
 - B) Potassium sparing diuretics
 - C) Calcium channel blockers
 - D) Sodium channel openers.
109. In the lidocaine series of local anaesthetics increasing the length of the alkylene chain up to three carbon units, the local anaesthetic potency.
- A) increases
 - B) abolishes
 - C) reduces
 - D) does not alter.
110. Which of the following anti-histamines does not cross the blood brain barrier easily ?
- A) Diphenhydramine
 - B) Cyclizine hydrochloride
 - C) Chlorpheniramine maleate
 - D) Cetirizine.

111. The fluorine in Flurazepam is present in

- A) 5' position
B) 3' position
C) 2' position
D) 4' position.

112. Ranitidine contains heterocyclic ring.

- A) Imidazole
B) Furan
C) Thiazole
D) Pyridine.

113. Aspirin can be estimated by

- A) non-aqueous titration
B) complexometry
C) acid-base titration
D) dead-stop end point method.

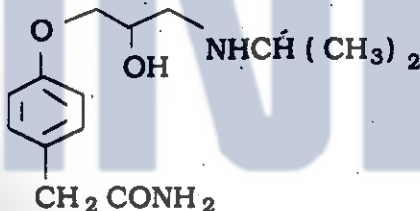
114. Which of the following is anti-cholinergic drug ?

- A) Carbachol
B) Phenyl ephrine
C) Eucatropine
D) Procainamide.

115. Clonidine is used in the treatment of the following disorders, *except*

- A) glaucoma
B) hypertension
C) arrhythmia
D) opiate withdrawal syndrome.

116.



- A) Atenolol
B) Metoprolol
C) Acebutolol
D) Timolol.

117. A central carbon atom not directly connected to any H₂ and is connected to a tertiary nitrogen through a 2 carbon unit on the other side with relatively small groups on the nitrogen is the pharmacophore of

- A) H₁ receptor antagonists
B) Narcotic analgesics
C) Thiazide diuretics
D) Butyrophenone antipsychotics.

118. Homatropine is a semisynthetic obtained or synthesised by reacting
- A) Tropine and Succinic acid B) Tropine and Malic acid
C) Tropine and Fumaric acid D) Tropine and Mandelic acid.
119. The 2' -chloro substituted analogue of oxazepam is
- A) Lorazepam B) Diazepam
C) Temazepam D) Prazepam.
120. Analgesic with N-Aryl anthranillic acid nucleus is
- A) Paracetamol B) Meclofenamic acid
C) Phenyl butazone D) Anti-pyrine.
121. Cholinergic receptor antagonist existing as enantiomer is
- A) Methacholine B) Carbachol
C) Acetyl choline D) Bethanechol.
122. Tripeleennamine is used as its
- A) Succinate B) Maleate
C) Adipate D) Citrate.
123. Which one of the following is not a non-barbiturate ?
- A) Paraldehyde B) Carbromal
C) Nitrazepam D) Thiopental Sodium.
124. Cyclomethycaine sulphate is used in
- A) anaesthetic in chemical burns
B) skin abrasions
C) dermatological lesions
D) all of these.
125. Reserpine is contraindicated in patients with a history of
- A) Epilepsy B) Hypertension
C) Mental depression D) Schizophrenia.

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126. Digitalis overdose can be reversed by the administration of
- A) Phenytoin
 - B) Calcium
 - C) Fab fragments of Digoxin antibody
 - D) Sodium.
127. Drugs causing allergic reactions generally act as
- A) Antigen
 - B) Haptens
 - C) Antibodies
 - D) Mediators.
128. A potent tranquilizer which also exhibits strong hypotensive effect is
- A) Chlordiazepoxide
 - B) Meprobamate
 - C) Reserpine
 - D) Thorazine.
129. Salicylates are metabolised through
- A) hydroxylation
 - B) oxidation
 - C) conjugation with glucuronic acid
 - D) reduction.
130. Sodium valproate acts by
- A) blocking the metabolism of GABA
 - B) blocking the GABA receptor
 - C) blocking the conduction of impulses
 - D) blocking the release of GABA.
131. Atorvastatin should be taken at night after dinner because
- A) it induces sleep
 - B) synthesis of cholesterol is maximum during night
 - C) the patient would be affected by sunlight if taken during daytime
 - D) of better absorption.

132. Thiocyanate accumulation and the consequent toxicity is a possibility when excess dose of is administered.

- A) Minoxidil
- B) Hydralazine
- C) Sodium nitroprusside
- D) Clonidine.

133. The specific antidote for Paracetamol poisoning is

- A) 4-Methyl Pyrrazole
- B) N-Acetyl cysteine
- C) Folinic acid
- D) Sodium thiosulphate.

134. Digitalis produces bradycardia by the following mechanisms, *except*

- A) reflexly through no dose ganglion
- B) direct stimulation of vagal centre
- C) sensitization of SA Node to acetylcholine
- D) sensitization of SA Node to adrenaline.

135. Pilocarpine can be used in

- A) Asthma
- B) Coronary insufficiency
- C) Glaucoma
- D) Hyperthyroidism.

136. Fluoxetine is a / an

- A) 5-HT partial agonist
- B) anti-histaminic
- C) inhibitor of 5-HT uptake
- D) specific 5-HT₃ receptor antagonist.

137. Tolerance refers to genetically determined sensitivity to a drug called as

- A) innate tolerance
- B) learned tolerance
- C) acute tolerance
- D) dispositional tolerance.

138. Which one of the following is correctly matched ?

- A) α -adrenergic antagonist — Lisinopril
- B) β -adrenergic antagonist — Propranolol
- C) Arterial vasodilators — Clonidine
- D) Calcium channel blocker — Diazoxide.

139. The movement of drug from a region of high drug concentration to a region of low-drug concentration is referred as

- A) facilitated diffusion
- B) pore transport
- C) active transport
- D) vesicular transport.

140. The biotransformation reaction involved in metabolism of methyl dopa is

- A) Acetylation
- B) Sulphation
- C) N-oxidation
- D) S-oxidation.

141. In asthma/COPD patients, which type of antihypertensive drug should be avoided ?

- A) β -adrenergic blockers
- B) Diuretics
- C) Calcium channel blockers
- D) ACE inhibitors.

142. Drugs having hydroxyl or carboxylic acid group can easily conjugate with

- A) sulphate
- B) glycine
- C) acetyl coenzyme-A
- D) glucuronic acid.

143. Colestipol is a/an drug.

- A) HMG CoA reductase inhibitor
- B) activate PPAR- α receptors
- C) Bile acid binding agent
- D) heavy metal binding agent.

144. Rate limiting step in the biosynthesis of catecholamines is

- A) formation of dopamine
- B) formation of dopa
- C) transport of tyrosine
- D) formation of noradrenaline.

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152. Gurmar comprises the

- A) stem and roots of *Gymnema sylvestre*
- B) leaves of *Gymnema sylvestre*
- C) powdered endosperm of the seeds of *Cyamopsis tetragonolobus*
- D) dried fruits of *Ammi majus*.

153. From callus, root growth can be enhanced by

- A) increasing Cytokinin amount than that of Auxin
- B) increasing Auxin amount than that of Cytokinin
- C) adding no hormone
- D) adding Gibberellins.

154. The adulterant of purple Foxglove leaves is

- A) *Synphytum officinale*
- B) *Cinchona officinale*
- C) *Convallaria majalis*
- D) *Urginea maritima*.

155. Narcotine contains which of the following moieties ?

- A) Phenanthrene
- B) Benzyl isoquinoline
- C) Quinoline
- D) Naphthalene.

156. The principal active constituents of which of the following drugs are dimeric glycosides ?

- A) Aloe
- B) Senna
- C) Digitalis
- D) Senna and Aloes.

157. Barbaloin and Sennoside-A can be categorised as and respectively.

- A) C-Glycoside, O-Glycoside
- B) O-Glycoside, C-Glycoside
- C) C-Glycoside, N-Glycoside
- D) O-Glycoside, N-Glycoside.

158. Adenine and kinetin are collectively called as.

- A) Auxins
B) Gibberellins.
C) Cytokinin
D) Zeatin.

159. The ideal way to provide iron for a root culture would be to include in the medium.

- A) FeCl_3
B) $\text{Fe}_2(\text{SO}_4)_3$
C) Fe EDTA
D) FeSO_4 .

160. Which type of glycoside is present in aloes ?

- A) O-Glycoside
B) S-Glycoside
C) N-Glycoside
D) C-Glycoside.

161. Keller-Kiliani is a colour test specific for the identification of

- A) Sugar Moiety
B) Glycoside Moiety
C) Deoxy Sugar Moiety
D) Both (A) and (B).

162. Which of the following drugs is a natural insecticide ?

- A) Pyrethrum
B) Tulsi
C) Tylopora
D) Bael.

163. Absorbent cotton dissolves completely with uniform swelling in

- A) 60% w/w sulphuric acid
B) 90% formic acid
C) Ammoniacal copper oxide
D) Ferrous ammonium sulphate.

164. Development of Novel hybrid plant can be achieved with

- A) organ culture
B) cell-suspension culture
C) callus culture
D) protoplast culture.

185. The drugs that show antagonistic effects in nature whereby the sensitivity of the tissues to one drug is altered by another drug, are

- A) Trimethoprin and Sulphonamide
- B) Acetylcholine and Noradrenaline
- C) Digitalis glycosides and Diuretics
- D) Warfarin and Phenobarbital.

186. The term used to describe abnormal drug response is

- A) Hypersensitivity
- B) Idiosyncrasy
- C) Anaphylaxis
- D) Teratogenicity.

187. Hospital pharmacy deals with

- A) supply of ancillary products
- B) storage of biological products
- C) purchase of inventory drugs
- D) both (A) and (B).

188. Drug causing direct liver damage is

- A) Isoniazid
- B) Indomethacin
- C) Phenytoin
- D) Aspirin.

189. Milk and antacids reduce absorption of tetracyclines by forming

- A) chelation
- B) complexes
- C) protein binder
- D) insoluble complexes.

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190. Which one of the following statements is matched correctly ?

- A) Drug abuse — repeated consumption of a drug
- B) Drug misuse — use of drugs for the conditions for which they are unsuited
- C) Drug addiction — decreased response to pharmacological drugs
- D) Drug tolerance — periodic or chronic intoxication produced by repeated consumption.

191. Medication errors include

- A) dispensing errors and medication
- B) patient compliance
- C) exact prescription
- D) none of these.

192. Coffee, tea and fruit juices antagonise the efficacy of antipsychotic drugs.

- A) Thioxantins
- B) Butyrophenones
- C) Phenothiazines
- D) Sulpiride.

193. The principles of ICH guideline for GCP have their origin in

- A) Declaration of Canada
- B) Declaration of Helsinki
- C) Declaration of Austria
- D) Declaration of Australia.

194. Phase-I clinical trials are carried out

- I. to determine the maximum tolerated dose in humans
- II. to determine the pharmacokinetics and pharmacodynamics activity
- III. in healthy adult males
- IV. in healthy adult females.

Of these

- | | |
|---------------|-------------------|
| A) I and II | B) II, III and IV |
| C) III and IV | D) I, II and III. |

195. A child who swallows an overdose of fluoride containing multivitamin product should be treated with

- | | |
|--------------------|---|
| A) acetyl cysteine | B) dilute $\text{Ca}(\text{OH})_2$ solution |
| C) docusate sodium | D) atropine sulphate. |

196. Cholestyramine will probably interfere with the GI absorption of

- I. Chlorothiazide
- II. Warfarin
- III. Phenobarbital.

Of these

- | | |
|------------------|---------------------|
| A) I only | B) II and III |
| C) I, II and III | D) no interference. |

197. Drug information sources include all, *except*

- | | |
|-------------|------------------------------|
| A) journals | B) drugdex |
| C) dailies | D) online pharmacy journals. |

198. In inventory control the turnover rate is calculated by which of the following formulae ?

- A) Annual purchase + Annual inventory
- B) Annual purchase \times Annual inventory
- C) Annual inventory + Annual purchase
- D) Annual purchase + Annual inventory.

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199. Aluminium hydroxide gel is combined with Magnesium hydroxide gel in antacid preparations to

- A) ensure synergism
- B) counter the constipating effect of magnesium hydroxide
- C) balance the purgative effect of magnesium hydroxide
- D) improve the absorption of magnesium hydroxide.

200. Match List I correctly with List II and select your answer using the codes given below :

List I

List II

a) Salbutamol

1. Enhance GI-mobility

b) Tolazoline

2. Stimulate heart rate

c) Propranolol

3. Bronchodilator

d) Isoprenaline

4. Suppress ventricular tachycardia.

Codes :

	a	b	c	d
A)	3	1	4	2
B)	2	1	4	3
C)	4	1	2	3
D)	3	2	4	1.