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## MANIPAL UNIVERSITY

### MBBS PHASE I STAGE II DEGREE EXAMINATION – FEBRUARY 2014

#### SUBJECT: PHARMACOLOGY – I (ESSAY)

Monday, February 10, 2014

Time: 09:00 – 11:00 Hrs.

Max. Marks: 60

1. List two advantages of the following routes of drug administration and mention a drug administered by each of them:

- 1A. Sublingual
- 1B. Intravenous

(1½+1½ = 3 marks)

2A. A 67 year old woman presents with pain in her left thigh muscle. Ultrasonography indicates the presence of deep vein thrombosis in the affected limb.

Mention two drugs belonging to different groups that can be used in the above patient and explain the mechanism of action of any one of them.

2B. Explain the antirheumatoid action of methotrexate.

(3+2 = 5 marks)

3A. 35 year old Reema with plague is being treated with an antibiotic that is administered only by parenteral route and has ototoxic and nephrotoxic potential.

Identify the group of antibiotics that is used in the above patient and explain its mechanism of action.

3B. Mention two chelating agents with one therapeutic use for each of them.

(2+2 = 4 marks)

**4. Write short notes on the following:**

- 4A. Succinylcholine
- 4B. Inhalational corticosteroids
- 4C. Uses and adverse effects of calcium channel blockers

(3×3 = 9 marks)

5. 43- year old Lew is being treated with chlorpromazine for schizophrenia. Following two weeks of treatment, he develops symptoms like tremors, muscular rigidity and dyskinesia. Explain why did Lew develop the above symptoms and mention two drugs that can be used to treat them.

(3 marks)

6. Explain the pharmacological basis for the following:

- 6A. Use of phenoxybenzamine in treatment of phaeochromocytoma.
- 6B. Simvastatin is combined with ezetimibe in the treatment of hypercholesterolemia.
- 6C. Disulfiram is used for aversion therapy in chronic alcoholics.
- 6D. Thiopentone sodium is used for the induction of general anesthesia.
- 6E. Neostigmine is used in patients with myasthenia gravis.
- 6F. Lactulose is used in treatment of hepatic encephalopathy.

(2×6 = 12 marks)

7. Mention one indication for the following drugs and explain the basis for their use:

- 7A. Paracetamol
- 7B. Morphine
- 7C. Levodopa
- 7D. Enalapril

(2×4 = 8 marks)

8A. A patient with edema is being treated with a drug that inhibits the absorption of sodium ions in the renal tubules. The effectiveness of this drug is limited by hyponatremia and ototoxicity, which appears within the first few weeks of therapy.

What could be the drug administered in the above patient and to which group it belongs? Explain its mechanism of action.

8B. Explain the US-FDA approved triple drug regimen used for eradication of *H.pylori*.

(3+3 = 6 marks)

9A. Enumerate two gonadotropin preparations and mention two therapeutic uses of any one of them.

9B. A 25 year old truck driver complains of itchy, watery eyes and running nose.

Mention the preferred group of antihistaminics with an example that should be used in the above patient and list its two other therapeutic uses.

(2+2 = 4 marks)

10. Mention a drug each useful in the following conditions and explain the mechanism of action each one of them:

- 10A. Anovulatory infertility
- 10B. Hyperthyroidism
- 10C. Mixed worm infestation

(2×3 = 6 marks)



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**MANIPAL UNIVERSITY****MBBS PHASE I STAGE II DEGREE EXAMINATION – FEBRUARY 2014****SUBJECT: PHARMACOLOGY – II (MCQs)**

Monday, February 10, 2014

Time: 11:30 – 12:30 Hrs.

Max. Marks: 120

**INSTRUCTIONS**

1. For each statement, select **T** (True) or **F** (False) as your choice.
2. Indicate your choice by darkening the appropriate circle in the answer sheet provided.
3. Use only HB or 2B pencils to darken the circle.
4. Leave blank for Don't Know response.
5. Scoring systems is as follows:  

For every <b>Correct</b> response	<b>1</b> mark is awarded
For every <b>Wrong</b> response	<b>0.5</b> mark is deducted
For every <b>Don't Know</b> response	<b>No</b> mark is deducted
6. Indicate your roll number (Registration Number) clearly and correctly.
7. Do not write anything in the question paper.
8. The true/false statements are numbered 101 to 160 and 201 to 260 (Total 120 statements).
9. This question paper contains **03** pages. Please make sure that the question paper provided to you has all the pages.



**Following terms are correctly matched with their definitions**

101. Superinfection: appearance of a new infection as a result of antimicrobial therapy
102. Idiosyncrasy: immunologically mediated adverse drug reaction
103. Potency: dose of a drug required to produce a given response
104. Generic name: name given according to the chemical constitution of the drug

**Factors that can reduce the bioavailability of a drug include**

105. First pass metabolism
106. Enterohepatic cycling
107. Increased blood flow
108. Ionisation

**Following drugs are used as immunosuppressants**

109. Azathioprine
110. Cisplatin
111. Tacrolimus
112. Cyclosporine

**Following drugs are correctly matched with their mechanism of action**

113. Vancomycin: inhibits bacterial protein synthesis
114. Cyclophosphamide: inhibits microtubule polymerization
115. Finasteride: inhibits 5 $\alpha$ -reductase enzyme
116. Minoxidil: causes opening of K<sup>+</sup> channels

**Terbinafine**

117. Acts by inhibiting 14- $\alpha$  demethylase enzyme
118. Is effective topically
119. Is useful in tinea infections
120. Shows disulfiram like reaction with alcohol

**Dapsone**

121. Is leprostatic
122. Is not used in multibacillary leprosy
123. Is used in the management of lepra reaction
124. Can cause methaemoglobinemia in persons with G-6-PD deficiency

**Lignocaine**

125. Acts by blocking voltage gated sodium channels
126. Absorption is enhanced by adrenaline
127. Can cause convulsions at higher doses

**Following drugs are correctly matched with their therapeutic uses**

128. Bethanechol: paralytic ileus
129. Folic acid: methotrexate toxicity
130. Prazosin: benign prostatic hypertrophy
131. Erythropoietin: anaemia of chronic renal failure

**Following statements are true regarding different phases of clinical trials**

132. Phase I trial is conducted on healthy human volunteers
133. Phase II trial is conducted on more than 1000 patients
134. Phase III trial is conducted to discover relatively rare side effects after the drug is marketed

**Antimalarial drugs that act as blood schizonticides include**

135. Chloroquine
136. Primaquine
137. Quinine
138. Artemesinin

**Following drugs are correctly matched with their therapeutic uses**

139. Acyclovir: genital herpes
140. Sertraline: acute mania
141. Dantrolene: malignant hyperthermia
142. Zidovudine: post-exposure prophylaxis of HIV

**Carbamazepine**

143. Acts by blocking T-type calcium channels in thalamic neurons
144. Is useful in the management of bipolar disorder
145. Inhibits the secretion of ADH from the posterior pituitary
146. Is used to treat trigeminal neuralgia

**Benzodiazepines**

147. Decrease the frequency of opening of chloride channels
148. Have lower abuse liability than barbiturates
149. Have low margin of safety
150. Cause more distortion of sleep architecture compared to barbiturates
151. Have a specific antidote

**Drugs which act by inhibiting gastric acid secretion include**

152. Sucralfate
153. Ranitidine
154. Calcium carbonate
155. Misoprostol

### **Metoclopramide**

- 156. Blocks 5-HT<sub>3</sub> receptor on the interneurons in GIT
- 157. Does not cross the blood brain barrier
- 158. Is useful in treatment of GERD
- 159. Is useful in motion sickness

### **Salbutamol**

- 160. Is a selective  $\beta_2$  agonist
- 201. Inhibits phosphodiesterase enzyme in the bronchial cells
- 202. Is used to terminate acute attack of asthma
- 203. Can be administered by inhalational route

### **Following drug combinations are safe**

- 204. Isosorbide dinitrate + metoprolol
- 205. Digoxin + quinidine
- 206. Lisinopril + thiazide
- 207. Insulin + propranolol

### **Regarding antitubercular drugs**

- 208. Isoniazid acts by inhibiting arabinosyl transferase in tubercle bacilli
- 209. Rifampicin can cause hepatitis
- 210. Ethambutol is avoided in children below 6 years of age
- 211. Pyrazinamide can be safely administered in patients with history of gout

### **Uterine relaxants include**

- 212. Magnesium sulfate
- 213. Ritodrine
- 214. Ergometrine

**A 47 year old man exhibited signs and symptoms of acromegaly. Drugs which can be used to manage this case include**

- 215. Octreotide
- 216. Somatrem
- 217. Pegvisomant
- 218. Somatostatin

### **Pharmacological effects of exogenous glucocorticoids include**

- 219. Increased muscle mass
- 220. Inhibition of leukotriene synthesis
- 221. Delayed wound healing
- 222. Decreased blood glucose level
- 223. Increased calcium absorption from intestine

### **Drugs which act by blocking androgen receptors include**

- 224. Nafarelin
- 225. Tamoxifen
- 226. Flutamide
- 227. Abarelix

### **Following drugs can be used in hypertensive emergencies**

- 228. Sodium nitroprusside
- 229. Furosemide
- 230. Losartan
- 231. Atenolol

### **Positive inotropic agents include**

- 232. Dopamine
- 233. Milrinone
- 234. Carvedilol
- 235. Hydralazine

### **Following are the therapeutic uses of propranolol**

- 236. Variant angina
- 237. Hypertension
- 238. Anxiety
- 239. Prophylaxis of migraine

### **Drugs useful in dry cough include**

- 240. Bromhexine
- 241. Noscapine
- 242. Acetylcysteine
- 243. Codeine

### **Following drugs are correctly matched with their adverse effects**

- 244. Atropine: heart block
- 245. Alendronate: esophagitis
- 246. Acetazolamide: metabolic alkalosis
- 247. Desmopressin: diabetes insipidus
- 248. Loperamide: infective diarrhoea

### **Following drugs are correctly matched with the receptors they block**

- 249. Naloxone: opioid receptor
- 250. Phentolamine:  $\beta_1$  receptor
- 251. Rosiglitazone: PPAR-gamma
- 252. Montelukast: leukotriene receptor

### **Metronidazole**

- 253. Is a luminal amoebicide
- 254. Causes metallic taste
- 255. Is longer acting than tinidazole
- 256. Is effective in treating *Trichomonas vaginitis*

### **Glipizide**

- 257. Acts by inhibiting ATP-sensitive potassium channels
- 258. Is a euglycemic agent
- 259. Causes lactic acidosis in COPD patients
- 260. Is used in Type I diabetes mellitus

