PHARMACOLOGY MCQs

1 Concerning Carbamazepine;
   A) Is poorly absorbed orally
   B) Plasma concentration correlates well with CSF concentration
   C) Has no active metabolites
   D) Metabolism is inhibited by Phenytoin
   E) May cause polyuria

2 With respect to the BDZ receptor;
   A) They form part of GABA\textsubscript{A} receptor complex
   B) Binding of Benzodiazepine increases chloride ion conductance
   C) Binding of Benzodiazepine facilitates the excitatory action of the receptor
   D) They are present in the CNS, and skeletal muscle
   E) Flumazenil is an agonist at the Benzodiazepine receptor

3 Glucagen;
   A) Is a hormonal product of pancreatic beta cells
   B) Increases blood sugar by decreasing CAMP
   C) Is useful in reversing the cardiac effects of severe beta blocker overdose
   D) Causes vasoconstriction of smooth muscle
   E) Decreases heart rate and force of contraction

4 Concerning opiate drugs;
   A) Withdrawal is rarely fatal
   B) There is tolerance to effects such as myosis
   C) IV heroin is followed by an intense orgasm
   D) Morphine has no active metabolites
   E) Naloxone is given IV only
5 In pregnancy;
A) Phenobarbitone reduces the risk of intracranial bleeds in pre-term infants
B) Drugs with MW250-500 have difficulty crossing the placenta
C) Folic acid increases the risk of spinal defects
D) Drugs reach the placenta via the umbilical artery
E) Phenytoin binds to maternal protein with greater affinity than foetal protein

6 Phenytoin;
A) Acts mainly by altering Cl\(^{-}\) conductance
B) Unbound in plasma
C) Class 1B antiarrhythmics
D) Active metabolites contribute to effect
E) Half life is two hours

7 The following can reach a maximal response;
A) Competitive antagonist
B) Partial agonist
C) Agonist plus competitive antagonist
D) Partial antagonist
E) Agonist and irreversible antagonist

8 Thiopentone;
A) Is a Benzodiazepine derivative
B) Increases intracranial pressure
C) Has anti-convulsant activity
D) Has a brief duration of action due to elimination half life of 5 minutes
E) Can induce labour in late pregnancy

9 Regarding the action of BDZs;
A) They act via GABA\(_\text{A}\) receptor chloride channel
B) They appear to increase the duration of GABA-gated channels
C) They appear to interact with alpha subunit of GABA receptor
D) They directly initiate chloride current
E) All of the above
10 Which of the following BDZs is metabolised directly to inactive metabolites;

A) Diazepam  
B) Chlordiazepoxide  
C) Flurazepam  
D) Oxazepam  
E) Prazepam

11 Regarding anti-inflammatories;

A) Mesoprotol is less effective than H₂ blockers for the prevention of non-steroidal anti-inflammatory induced gastrointestinal damage  
B) Salicyclism is irreversible  
C) Most non-steroidals have low protein binding  
D) Thromboxane synthesis inhibition by Aspirin is reversible  
E) Colchicine inhibits the formation of leukotriene B₄

12 Ranitidine;

A) Undergoes extensive hepatic metabolism  
B) Has a volume of distribution about the same as total body water  
C) Is more effective than Omeprazole in decreasing acid secretion in the stomach  
D) Is excreted 20% unchanged in the kidney  
E) Has a highly variable bioavailability

13 Ipatropium bromide;

A) Is a tertiary amine compound  
B) Is a muscarinic agonist drug  
C) Is available as an intravenous formulation  
D) Is a synthetic analogue of atropine  
E) Is not of use in chronic obstructive airways disease
14 **Insulin;**

A) Is a large protein  
B) Is metabolised solely by the kidney  
C) The insulin receptor consists of alpha and beta subunits  
D) C-Peptide has a greater hypoglycaemic action than insulin  
E) Hydrocortisone increases the affinity of insulin receptors for insulin  

15 **In regards to breast feeding and antibiotics, which statement is false;**

A) Chloramphenicol concentration in milk may cause bone marrow suppression  
B) Penicillin has very low concentration in breast milk  
C) Chloramphenicol concentration in breast milk is not sufficient to cause the grey baby syndrome  
D) Tetracyclines concentration in breast milk - less than 30-40% of maternal serum may cause permanent tooth staining in infants  
E) Majority of antibiotics taken by nursing mothers can be detected in breast milk  

16 **With respect to bronchodilators;**

A) Thiophylline modifies the late response in asthma  
B) Salbutamol inhibits adenylyl cyclase  
C) B2 receptors are most sensitive to Noradrenaline  
D) Cromolyn sodium is effective in reducing the symptomatic severity of perennial asthma  
E) Antimuscarinic agents have no role in treatment of chronic airways limitation  

17 **Naltrexone;**

A) Cannot reverse antagonists at the delta and Kappa receptors ie mu selective  
B) Has bulkier substituents at the N17 position  
C) Does not undergo first pass metabolism  
D) Has a short half-life and blocks Heroin for 8 hours  
E) Is characterised by tolerance and a mild abstinence syndrome
18 Use of Naltrexone for treatment of alcoholism is characterised by increased alcohol intake;

A) In experimental animals who received treatment
B) No effect without therapy
C) No reduction in intake for those who relapse
D) Reduction in subjective ‘high’
E) Clear evidence of durability of effect

19 Regarding volume of distribution, all are true except;

A) Can exceed the physical volume in the body
B) Relates the amount of drug in the body to the concentration of drug in the blood, plasma, afferent
C) It is a volume
D) Drugs completely retained intravascularly have a high volume of distribution
E) Can be equal with the physical volume of the body

20 Isoproteriol;

A) Is a B₂ selective agonist
B) Is a moderate bronchodilator
C) Causes maximal bronchodilatation
D) Duration of action is 60-90 minutes
E) All of the above

21 In regard to the use of Ticlopidine;

A) Haemorrhage is not an adverse effect
B) Cannot be used in people who cannot tolerate Aspirin
C) Adverse effects include respiratory depression and tinnitus
D) Has no effect on prostaglandin synthesis
E) Haemolytic anaemia occurs in 1%
22 In respect to Glyceryl Trinitrate;

A) It is light sensitive  
B) It has > 50% bioavailability  
C) Arteries dilate more than veins  
D) It decreases cardiac contractility  
E) It decreases cardiac ejection time

23 With relation to Streptokinase;

A) Its action is splitting thrombin molecules  
B) It is sourced from human plasma  
C) Intra-arterial administration is most effective  
D) Prior exposure may result in antibody formation  
E) It attaches to, then activates, thrombin

24 Concerning drugs in the elderly;

A) Decline in hepatic phase II reactions are more important than decline in phase I reactions  
B) The half-life of most Benzodiazepines is not significantly increased with age  
C) <10% of the elderly population will have a normal creatinine clearance  
D) Decreased blood flow to the liver accounts for the decrease of ethanol clearance in the elderly  
E) Evidence suggests the elderly are both more responsive to anti-depressants as well as more sensitive to their toxic effects

25 In relation to classes of antiarrhythmic drugs;

A) Class I action is sympathoplegic  
B) Class I action is sodium channel block  
C) Class III action is shortening of the action potential duration  
D) Class IV action is sodium channel block  
E) Class III action is sympathoplegic
26 In relation to antihypertensives;
A) Verapamil is less cardiac depressant than Nifedipine
B) ACE inhibitors are effective inhibitors of the Kallikren System
C) Enalapril is conjugated to the more active prodrug
D) Nitroprusside is metabolised in red blood cells
A) Captopril bioavailability is improved when it is taken with food

Trimethoprim

A) Inhibits formation of dihydrofolic acid
B) Is a weak acid
C) Inhibits dihydropteroate synthase
D) Is ineffective against clamydia
E) Is concentrated in prostatic tissue

28 Vecuronium;
A) Has significant ANS effects
B) Primarily acts as a competitive antagonist at muscarinic cholinergic receptors
C) Is predominantly renally excreted
D) Induced blockade is surmountable
E) Is metabolised over 20-40 minutes by plasma cholinesterase

29 In antimicrobial resistance to antibiotics;
A) Beta lactamases can be produced by pseudomonas sp.
B) Resistance due to PBP alteration cannot be overcome by increased drug concentration
C) Resistance in gram positive organisms is never due to membrane impermeability to antibiotic
D) Beta lactamases hydrolyse Penicillins but not Cephalosporins
E) MRSA produce PBPs with high affinity for Penicillins

30 The following are all mechanisms of actions except;
A) Ceftriaxone is a cell wall synthesis inhibitor
B) Vancomycin is a cell wall synthesis inhibitor  
C) Teicoplanin is a protein synthesis inhibitor  
D) Chloramphenicol is a protein synthesis inhibitor  
E) Sulfonamides competitively inhibit dihydropteroate synthase

31 Regarding Vecuronium:
A) It is a depolarising neuromuscular blocker  
B) It has sustained response to tetanic stimulus  
C) Excreted mainly though biliary system  
D) Has severe effect on the cardiovascular system  
E) Neostigmin will augment its effect

32 Concerning the use of drugs in children:
A) The principles of drug absorption in infants are generally different from adults  
B) Protein binding of drugs is actually increased in neonates  
C) Bilirubin can displace drugs such as Phenytoin from Albumin in neonates thus potentiating toxicity  
D) Neonatal GFR is slightly higher than adults requiring higher doses for renally eliminated drugs  
E) Maternal drug use during pregnancy has no effect on neonatal metabolism

33 Nalidixic acid:
A) Is a urinary antiseptic  
B) Is a quinolone drug  
C) Is active orally and is excreted in the urine partly unchanged and partly as inactive glucuromide  
D) Is inactive against proteins and pseudomonas  
E) All of the above

34 The actions of carbon monoxide include all except:
A) Combined irreversibly with oxygen binding sites of haemoglobin  
B) Interfere with dissociation of oxyhaemoglobin  
C) Reduce transfer of oxygen to tissues  
D) Development of atherosclerotic heart disease
E) Irreversible damage to myocardium

35 Clearance;

A) Involves drug elimination at three major sites
B) Is dependent on the GFR
C) May be capacity and non-linear
D) May be flow – dependant (Michaelis –Menten elimination)
E) Is defined as the rate of elimination divided by the drug dosage
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B</td>
<td>Page 16</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>Page 337 – 339</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>Page 701 – 703</td>
</tr>
<tr>
<td>4</td>
<td>A</td>
<td>Page 509</td>
</tr>
<tr>
<td>5</td>
<td>A</td>
<td>Page 977 – 981</td>
</tr>
<tr>
<td>6</td>
<td>C</td>
<td>Page 63</td>
</tr>
<tr>
<td>7</td>
<td>E</td>
<td>Page 16</td>
</tr>
<tr>
<td>8</td>
<td>C</td>
<td>Page 362</td>
</tr>
<tr>
<td>9</td>
<td>C</td>
<td>Page 359 – 360</td>
</tr>
<tr>
<td>10</td>
<td>D</td>
<td>Page 357 – 358</td>
</tr>
<tr>
<td>11</td>
<td>E</td>
<td>Page 578 – 597</td>
</tr>
<tr>
<td>12</td>
<td>E</td>
<td>Page 270 – 272</td>
</tr>
<tr>
<td>13</td>
<td>D</td>
<td>Page 107, 111</td>
</tr>
<tr>
<td>14</td>
<td>C</td>
<td>Page 684 – 687</td>
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<td>15</td>
<td>D</td>
<td>Page 986</td>
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<tr>
<td>16</td>
<td>D</td>
<td>Page 281, 287</td>
</tr>
<tr>
<td>17</td>
<td>B</td>
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<td>18</td>
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<td>19</td>
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<td>Page 34</td>
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<td>20</td>
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<td>Page 333</td>
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<td>21</td>
<td>D</td>
<td>Page 557</td>
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<tr>
<td>22</td>
<td>E</td>
<td>Page 183 – 185</td>
</tr>
<tr>
<td>23</td>
<td>D</td>
<td>Page 260 – 261</td>
</tr>
<tr>
<td>24</td>
<td>E</td>
<td>Page 989 – 993</td>
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<tr>
<td>25</td>
<td>B</td>
<td>Page 226</td>
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<tr>
<td>26</td>
<td>D</td>
<td>Page 153 – 178</td>
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<td>27</td>
<td>E</td>
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<td>28</td>
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<td>29</td>
<td>A</td>
<td>Page 725</td>
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<td>30</td>
<td>C</td>
<td>Page 724 – 770</td>
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<tr>
<td>31</td>
<td>C</td>
<td>Page 206 – 207</td>
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<tr>
<td>32</td>
<td>C</td>
<td>Page 982 – 987</td>
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<tr>
<td>33</td>
<td>E</td>
<td>Page 370</td>
</tr>
<tr>
<td>34</td>
<td>A</td>
<td>Page 947</td>
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<tr>
<td>35</td>
<td>C</td>
<td>Page 35, 39</td>
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</tbody>
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