MINION A

NAME DITILL

Please Print

Corrected

DENTAL PHARMACOLOGY EXAMINATION # 1

February 3, 2003

You have ONE (1) hour to complete this examination. The examination contains 50 questions, each worth 2 points.

Answer all questions on the computer sheet provided; use a soft lead pencil. Be sure that you have correctly identified your answer sheet by PRINTING your name and social security number and correctly filling in the grid spaces. Please turn in your exam booklet and answer sheet at the end of the exam. The exam booklet will be returned to you.

This examination is being administered under the Honor Code of Temple University Dental School.

Questions 1 – 50: Select the single, most appropriate answer. All of the following statements apply to chlorpromazine EXCEPT: A. Blocks muscarinic receptors B. Stimulates histamine receptors C. Blocks dopamine D-2 receptors D. Causes orthostatic hypotension T E. Is a member of the phenothiazine class of antipsychotic agents T 2. Vasoconstriction is most likely produced by stimulation of Alpha-1 adrenergic receptors B. Alpha-2 adrenergic receptors C. Muscarinic receptors

All of the following receptors are G-protein-linked EXCEPT:

Which of the following drugs is useful in prevention of motion sickness?

1 Na+ influx

Beta-1 adrenergic receptors

Beta-2 adrenergic receptors

Muscarinic /

Nicotinic

Physostigmine

Edrophonium

Bethanechol

Scopolamine

Albuterol

Alpha-1 adrenergic ✓

Alpha-2 adrenergic ✓

Beta-1 adrenergic ~

D.

E.

А. В.

C.

D.

Œ)

A.

B.

- 5. Following a urinary tract infection, an elderly patient suffers from incontinence due to constant spasms of the urinary bladder. Which drug is most likely to relieve the patient's symptoms?
 - A Bethanechol
 - B. . Propranolol
 - © Oxybutynin
 - D. · Clonidine
 - E. Phenylephrine
- 6. A patient presents to the emergency room with an acute overdose of a weak acid (pKa=6.8). The drug is excreted unchanged by the kidney. At which pH of the tubular filtrate will the greatest amount of drug be excreted?



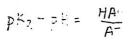
5.2

B. 6.0

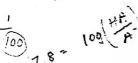
C. 6.8

D. 7.4

Ē) 7.8



5.2 - 6.8 1 - 1.6 = = 10



6.8

- Potent inhalational anesthetic; use is most associated with production of seizure activity:
 - A. Nitrous oxide Napporta
 - B. Thiopental Non inhalation
 - Halothane
 - D. Enflurane
 - Desflurane →
- 8. A 58-year-old man is brought to the emergency room of a local hospital unconscious from a drug overdose. Which route would be most rapid and effective for administration of an antidote?
 - A. Oral
 - B. Transdermal
 - C. Topical
 - (D) Intravenous
 - E. Intraocula:

)	9:	W	hich of the following drugs is excreted unchanged in the expired air?	1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
		A.	Thiopental	
		B.	Succinylcholine	
		(C)	Nitrous oxide	The state of the s
!		D.	· Propranolol	
		E.		
		. .	'Benztropine	
	10	. Alc	cohol is metabolized at a mate that S. II	
		isn	cohol is metabolized at a rate that follows zero order kinetics; therefore, it	
		13 1	detabolized at a fate that is	100
		A.	Directly	
		В.	Directly proportional to its plasma concentration	
		\sim	Inversely proportional to its plasma concentration	Comments and
		(C)	Independent of its plasma concentration	
		D.	Logarithmically proportional to its plasma concentration	
.0		E.	Nonlinearly related to its plasma concentration	Mark Mark
	11.	Sine	emet (corkidere /level -) : cc	was I'm
	11.	Sinc	emet (carbidopa/levodopa) is effective in treating Parkinsonism because	and the state of t
		A.	Levodona is converted to sould be seen in the seen in	
		В.	Levodopa is converted to carbidopa in the periphery	A PART OF THE PART
		υ.	Carbidopa crosses the blood-brain-barrier to increase levels of	
_		C.	endogenous dopamine	
F		C.	Carbidopa accelerates the conversion of levodopa into dopamine in the periphery	
<u></u>		D.		
		Œ.	Carbidopa is converted to levodopa in the periphery	
	$\overline{}$		Carbidopa inhibits the breakdown of levodopa in the periphery	And the second second
	(12)	Whic	ch of the following statement LEASE.	
8		** 1110	ch of the following statements LEAST characterizes triazolam?	A STATE OF THE STA
		Α.	Binds to a home diame.	3
_	*	11.	Binds to a benzodiazepine receptor, enhancing GABA-mediated chloride influx T	· Simple and
		B		
_			Is useful in the treatment of insomnia	
		D.	Greatly inhibits the activity of the drug-metabolizing microsomal system	T; BARB () IT.
		E.	Combined with ethanol, it may produce respiratory depression T	
		. .	Adverse effects may include drowsiness, dizziness, lethargy and ataxia	

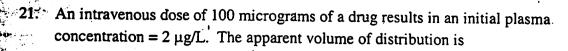
۲.

A STATE OF THE STATE OF THE STATE OF	4 元并为12 元	. (
e Carried St.	13. A	all of the following statements about ethanol are true EXCEPT:
a de la companya de l	A	Is hepatotoxic
D	B	Elevates body temperature by peripheral vasoconstriction
し ら	C	
	D	Can lead to excessive gastric acid secretion
	E.	Acute overdose can cause death by respiratory depression
		death by respiratory depression
	14. W	hich of the following drugs produces Parkinson-like symptoms?
		and and produces I arkinson-like symptoms?
a in a fair	Α.	Trihexyphenidyl
	В.	
A STATE OF THE STA	C.	Benztropine N
	D.	Selegiline N
	(E.)	Haloperidol
B	15. Di bre A. A. B. C. D. E. 16. D. E. D. E	Formaldehyde Acetaldehyde Formic acid Acetone Oxalate Non-depoistion Aches reverses the action of tubocurarine at the neuromuscular junction. Edrophonium -7 Aches Atropine Total Muscolitics Strychnine - MMT Benztropine Chlordiazepoxide BZ

		A.	Benzoquinonium	
· ·		B.	Metocurine	
) .		C.	'd-Tubocurarine	A Y
		(D)	Vecuronium	
		E.	Succinylcholine	1.80 - 2
68			, ',	
*	18	Whi	ich of the following statements best describes the mechanism of action	of
	10.		caine?	
		proc	same:	
		À.	Disable the representation of manufactures	11/1/14/2017
			Blocks the reuptake of norepinephrine	resident
_		В.	Stimulates nicotinic receptors	
_		C.	Blocks chloride influx	
_		D.	Stimulates GABA _A receptors	17.45.41.31.5
3.5		E.	Blocks sodium influx	To the
K (5.6)				
	19.	Whi	ch of the following describes the most likely adverse reaction of lidoc	aine?
			Seizu	res
		A.	Hepatotoxicity	18-64-4700
		(B.)	Neurotoxicity	And that
		Ċ.	Hypertension and tachycardia ↓	"" · " · · · · · · · · · · · · · · · · ·
)		D.	Renal toxicity N	
		E.	Gastric ulceration ₽	
				V5 1250
	20.	The	maximum effect of an agonist, shown by the height of its dose-respon	ise
			e, is an indicator of	A CAMPA
		our,	o, is all maisurer or	A Property of
		Α.	Potency	S. Selvenie
	•	B.	ED50	· serie was
)		Б. С.		
			Half-life	
		<u>D</u>	Efficacy	
		E.	Fraction of drug absorbed	

Identify the pure non-depolarizing drug that produces the LEAST release of

histamine and has minimal effect on the cardiovascular system?



- A. 2 mL
- B. 5 mL
- C. 2L
- D. 20 L
- (E.) 50 L

(22.	Which one of the following dru	igs is an irreversible	inhibitor of	monoamine
	oxidase? oxidase		-	1.

- A Tranyleypromine -
- B. Nortriptyline Tc ydic
- C. Imipramine Tc "
- D. Phenelzine
- E. Amitriptyline Tc/ciic

- A. Stimulation of GABA receptors
- B. Indirect release of endogenous catecholamines
- C. Metabolism to false neurochemical transmitters
- D. Inhibition of catecholamine metabolism
- E. Beta-2 adrenergic receptor agonism

24. Which one of the following drugs controls the manic phase of bipolar depression?

- A. Doxepin Tricyel.
- B. Fluoxetine Tricyol.
- C. Paroxetine ** \$5FI
- D. Lithium carbonate in the
- E. Desipramine Tricyol.

B	A. B) C. D. E.	Is a competitive antagonist of beta adrenergic receptors Is the drug of choice in patients with bronchial asthma Possesses high lipid solubility Is used for the prophylactic management of angina pectoris Is used for the prophylactic management of migraine headac	:he	
	\wedge			
	(26.) Inc	reased secretion of prolactin (as a side effect) is most likely to	be assoc	ciated
	wit	h which one of the following psychotropic agents?		
				7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Ą.	Imipramine Tricycl.		real and the second second
` '	B.	Olanzapine -		A 10 42
	C.	Fluoxetine - SSRI		
	D.	Chlorpromazine - # Anigasin-		
	(E)	Clozapine -		ALCOHOL .
(i)	27. Stir	nulation of muscarinic receptors produces all of the following	effects	49.
		CEPT:		
				46-164
	A.	Miosis		date par
	(B)	Skeletal muscle contraction		
2	Č.	Decrease in heart rate		
)	D.	Decrease in blood pressure		
	.E.)	Bronchoconstriction		
	•			
	28. Use	d for the induction of anesthesia:		
			1	Townson.
	Α.	Dantrolene		TANK MILL
	В.	Bromocriptine	3.53	Sugar Proc
_	C.	Isoproterenol -		
	Æ.	Oxazepam		
	(E.)	Midazolam		
	•			
_				

All of the following statements apply to propranolol **EXCEPT**:

Is a competitive antagonist of beta adrenergic receptors au

- A. Constricts small vessels in the nasal mucosa

 Reduces secretions by inhibiting parasympathetic stimulation

 C. Reverses hypotension during anesthesia

 D. Is a direct-acting alpha adrenergic receptor agonist

 E. Ts added to local anesthetic solutions
 - 30. A cardioselective adrenergic receptor blocker:
 - A. Timolol
 - B. Phentolamine
 - C. Propranolol
 - (D) Atenolol
 - E. Bethanechol
- 31. Flumazenil reverses the behavioral depressant effects of which one of the following drugs?
 - A. Morphine
 - B. Thioridazine
 - (C) Diazepam 67
 - D. Haloperidol
 - E. Phenobarbital

32. Given the following information concerning general anesthetics, which drug will induce anesthesia at the fastest rate if given at the MAC concentration?

Drug	_	MAC '	Blood: Gas Partition Coefficient
Α		23.0	1.5
В		5.0	14.0
C .	•	1.0	6.0
D	"	0.2)	4.0
E		12.0	0.7

lower

B:6-

PC

(9)

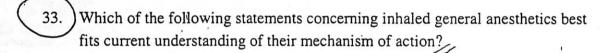
Drug A

B. Drug B

C. Drug C

D. Drug D

E. Drug E



A. Dissolve in the membrane, resulting in membrane expansion that indirectly inhibits nerve conduction

Neyer - overton

more force

B. Dissolve in the membrane, changing the membrane fluidity that indirectly inhibits nerve conduction *N*

Theory

C. Block sodium influx by acting as competitive inhibitors of acetylcholine binding \mathcal{N}

D. Dissolve in the membrane, binding to hydrophobic sites on

receptor-operated ion channels

Block sodium influx by acting a

Block sodium influx by acting as competitive inhibitors of GABA binding

		·	
	34.	Whi	ch of the following statements best describes a characteristic of halothane?
		A.	Is excreted unchanged by the lungs and thus is <u>not</u> hepatotoxic
		B.	Is a relatively weak agent, not useful for stage three anesthesia
		(c)	Is a depressant of respiration
		Ď.	Is administered intravenously
ě		·E.	Its pharmacokinetic properties are best explained by redistribution
٠			to adipose tissue
	35.	The	following statements about nitrous oxide are true EXCEPT:
	20	A.	Can cause hypoxia
		В.	Produces dependence and tolerance on chronic exposure
		C.	Has analgesic properties —
		D	Causes relaxation of skeletal muscle N_0
		E.	Can be used in combination with local anesthetics to reduce the
		E.	
			patient's anxiety
	0.6	****	1 Col
	36.	Whi	ch of the following drugs is most useful in stimulating salivary secretions?
		A.	Atropine
		В.	Pralidoxime
		C.	Benztropine
		D.	Propranolol
		Œ.)	Pilocarpine
		•	
(37.	Trea	atment of acute organophosphate poisoning may include all of the following
`		EX	CEPT:
			CEPT: Itrev. ChE inhibitors
	*(Α.	Atropine Muscarente entagonist
		В.	Pralidoxime V + 0 + x
		C	Oxygen
		B	Diazepam .
	3.	A	Epinephrine
			~rr

	38.	All c	of the following statements about hicotine are true EXCEPT:
The state of the s	· · · · · · · · · · · · · · · · · · ·	(A)	Lowers blood pressure and heart rate
源中地位		B.	Chronic use is associated with tolerance and dependence
		C.	Stimulates gastric acid secretion
1/1		D.	May cause seizures at acute high doses 7
	1()	E.	Is highly lipid soluble \mathcal{T}
	Ne:		
	39.	Whi	ch of the following is LEAST likely to occur with high doses of atropine?
		A.	Dry, flushed skin
	1955. 15	B	Bradycardia
		C.	Elevation in body temperature
		D.	Mental confusion
		E.	Constipation
E	40.	gastr A. B. C. D.	of the following are true about the passive absorption of drugs from the rointestinal tract EXCEPT: Weak bases are mostly absorbed from the small intestine \(\tau\) Highly lipid soluble drugs are readily absorbed \(\tau\) An increase in dose will increase the rate of absorption \(\tau\) The drugs are susceptible to first pass metabolism Only the ionized portion of the drugs are absorbed
	41.	All	of the following may reduce the duration of action of a drug EXCEPT :
		A.	A reduction in oral absorption \overline{I}
		B .	Redistribution to adipose tissue
		(c.)	A reduction in renal blood flow
		Ď.	Metabolism by the liver
		E.	Co-administration of a competitive antagonist

		B.	Acts as a partial agonist at serotonin receptors		
1		C.	Used in the management of generalized anxiety disorder	March 1	12,44
1		D.	Has a quick onset of therapeutic action (within 1-2 days)		10.00
		E.	Is a member of the azaperone class of anxiolytics \checkmark	1600	
		L.	is a member of the azaperone class of anxiotyties	Wildelph 43 (4)	1992
	12	A	intadine is used in the treatment of Parkinsonism because it		CL races
	43.	Ama	intadine is used in the treatment of Farkinsonish because it	7	
			The state of the s		LEW .
		A.	Inhibits the release of acetylcholine		A. 144
_		B.	Is a dopamine receptor agonist	3.55	H. W. W. C.
		(C.)	Increases the level of endogenous dopamine in the striatum	- 1	
_		D.	Inhibits catechol-O-methyl transferase (COMT)	12	A DAME
		E.	Blocks dopamine reuptake into presynaptic terminals		Table 1 W. Table 1
				17.00	
	44.	Whi	ch of the following drugs/toxins is matched to its mechanism	of action?	· 10
		2.42		1121	
		A.	Alpha-bungarotoxin - prevents glycine release from Rensha	w cell	
		(B)	Botulinum Toxin - blocks acetylcholine release		
2		C.	Black Widow Spider Toxin - blocks the glycine receptor in	the spinal c	ord
ノ		D.	Tetanus Toxin – stimulates GABA release		
70		E.	Strychnine – binds irreversibly to the nicotinic receptor		
		ے.	Surjemme emes mesers		
	45.	Enir	ephrine is added to a preparation of mepivacaine in order to		414 A. C.
	чэ.	Lpn	reprinte is added to a preparation of map: accuse in order to		
		٨	Pleak its liver metabolism		
		A.	Block its liver metabolism		· · · · · · · · · · · · · · · · · · ·
		B.	Enhance its absorption into the systemic circulation		A CONSTRUCTION
((C)	Increase its duration of action		
		D.	Enhance its vasodilating effects		
		E.	Alter its degree of ionization		

All of the following statements concerning buspirone are true EXCEPT:

Lacks muscle relaxant activity

					*		Alana da
	46.		10.000	ninațion half-life of 2 h		time for its	A-46
		effec	ctive elimination (>95	(%) from the body is a	pproximately		
			25		2		4 - 4
		A.	2 hrs	11.5			· Service State Service State Service
		B.	4 hrs	4.3			
!		(Ĉ.)	9 hrs	×	**		eron (alphanes)
_		D.	16 hrs		, i	11,4279	
		E.	30 hrs			AND THE PROPERTY.	20 At 20
•		.—.	1				
	47.	Clin	ically used, effective	hronchodilator:	x '1		
•	-17.	Cim	icany asca, circuite	oronemounator.			
**		A.	Benztropine	×			W.W
		В.	Prazosin				Line Miles
					,	- 192	
		C.	Bethanechol		19		Control of the second
			Metoprolol			118	10.00
		(E)	Terbutaline				
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			37.74	10.2
	48.			ng drugs, applied topic	cally to the eye, ca	auses	Should A
		myd	riasis without produc	ing cycloplegia?			
					•		**************************************
		A.	Phenoxybenzamine				
		(B)	Phenylephrine				STORY MONTH
		C.	Pilocarpine				
		D.	Atropine			* 100	
		E.	Neostigmine				
	For	quest	tions 49 and 50: For	each of the numbered	items, select the	single most	eff Contract
	appr	opria	te lettered response.	You may use each lette	er once or not at a	all.	AMERICAN STATE
	11	•	•	.			STATE WAY
		A.	Is a Ca ²⁺ dependent	process			(1-1) (1) (12)
		В.	7	nt enzyme modification	on		· · · · · · · · · · · · · · · · · · ·
		C.		nzyme modification			
		D.		, and modifies DNA a	and protein synthe	esis of horm	ni.
		E.		itol 1,4,5 trisphosphate			J-16
		٠.	13 regulated by illos	nor 1, 1,5 disphosphate	الرازين الم		
	49.	Drot	ein phosphorylation	C			
	50.						
	50.	SIEF	oid hormone receptor	D			
				END OF EXAM	1		
				L. 12 Oz L. 1.1.			