5.1 *Which of the following organs is innervated only by parasympathetic nerves:*

A. Iris muscles
B. Ciliary muscle
C. Sweat glands
D. Splenic capsule ***(p. 72)***

5.2 *The sympathetic and parasympathetic systems exert functionally opposite influences on the following parameters* ***except****:*

A. Heart rate
B. Atrial refractory period
C. Pupil diameter
D. Intestinal motility ***(p. 72)***

5.3 *Tetrodotoxin blocks nerve impulse/junctional transmission by:*

A. Anticholinergic action
B. Depleting acetylcholine
C. Blocking Na^+ channels
D. Blocking Ca^{2+} channels ***(p. 74)***

5.1 B	**5.2 B**	**5.3 C**

5.4 *The cotransmitter may serve the following function/ functions:*

A. Regulate the release of the primary transmitter from the nerve ending
B. Alter postjunctional action of the primary transmitter
C. Itself act as an alternative transmitter
D. All of the above ***(p. 75)***

5.5 *The following cotransmitter is most probably involved in mediating nonadrenergic noncholinergic (NANC) relaxation of the gut:*

A. Neuropeptide Y (NPY)
B. Adenosine
C. Nitric oxide (NO)
D. Kallidin ***(p. 75, 603)***

6.1 *The major postjunctional cholinergic receptor is of the muscarinic type at the following site:*

A. Postganglionic parasympathetic
B. Adrenal medulla
C. Autonomic ganglia
D. Neuromuscular junction ***(p. 77)***

6.2 *Pseudocholinesterase differs from true cholinesterase in that:*

A. It does not hydrolyse acetylcholine
B. It hydrolyses acetylcholine at a slower rate
C. It is more susceptible to inhibition by physostigmine
D. It is the only form of circulating cholinesterase ***(p. 78)***

6.3 *The choline ester resistant to both true and pseudocholinesterase is:*

A. Methacholine
B. Bethanechol
C. Benzoylcholine
D. Butyrylcholine ***(p. 78, 80)***

5.4D	**5.5C**	**6.1A**	**6.2B**	**6.3B**

Pharma

ANS PART

These are collected questions for a revision.

I hope it's useful for you. enjoy!

6.4 *Muscarinic cholinergic receptors:*

A. Are located only on parasympathetically innervated effector cells
B. Mediate responses by opening an intrinsic Na^+ ion channel
C. Are present on vascular endothelium which has no cholinergic nerve supply
D. Predominate in the autonomic ganglia

(p. 77, 78)

6.5 *The cardiac muscarinic receptors:*

A. Are of the M_1 subtype
B. Are of the M_2 subtype
C. Are selectively blocked by pirenzepine
D. Function through the $PIP_2 \rightarrow IP_3$/DAG pathway

(p. 78)

6.6 *Cholinergic muscarinic receptor stimulation produces the following effects* ***except****:*

A. Sweating
B. Rise in blood pressure
C. Bradycardia
D. Urination ***(p. 80)***

6.7 *The smooth muscle structure that is relaxed by cholinergic drugs is:*

A. Colon
B. Gastric fundus
C. Major bronchi
D. Bladder trigone ***(p. 80)***

6.8 *Which of the following secretions is* ***not*** *stimulated by acetylcholine:*

A. Tear
B. Bile
C. Pancreatic juice
D. Sweat ***(p. 80)***

6.4	**C**	**6.5**	**B**	**6.6**	**B**	**6.7**	**D**	**6.8**	**B**

6.9 *Acetylcholine has no therapeutic application because:*

A. None of its actions are beneficial in any condition
B. Its effects are transient
C. It produces wide spread actions affecting many organs
D. Both 'B' and 'C' are correct ***(p. 80)***

6.10 *Pilocarpine is used for:*

A. Glaucoma
B. Paralytic ileus
C. Urinary retention
D. All of the above ***(p. 81)***

6.11 *Actions of pilocarpine include the following* ***except:***

A. Sweating
B. Salivation
C. Miosis
D. Cycloplegia ***(p. 81)***

6.12 *The following inhibitor binds only to the ani-onic site of the cholinesterase enzyme:*

A. Neostigmine
B. Physostigmine
C. Edrophonium
D. Dyflos ***(p. 83)***

6.13 *Reactivation of cholinesterase enzyme occurs on hydrolysis of the inhibitor by the same enzyme molecule in case of the following anticholinesterase:*

A. Edrophonium
B. Neostigmine
C. Dyflos
D. Tacrine ***(p. 83)***

6.9	D	6.10	A	6.11	D	6.12	C	6.13	B

6.14 *The anticholinesterase action of edrophonium is short lasting because termination of its action depends on:*

A. Dissociation and diffusion of the drug from the enzyme
B. Hydrolysis of the drug by the enzyme
C. Synthesis of fresh enzyme molecules
D. A combination of the above three processes ***(p. 83)***

6.15 *The organophosphates produce irreversible inhibition of cholinesterase because:*

A. They bind to an allosteric site of the enzyme resulting in unfavourable conformation of esteratic site to bind acetylcholine
B. Regeneration time of the phosphorylated enzyme is longer than the turnover time of the enzyme molecules
C. Phosphorylation results in rapid degradation of enzyme molecules
D. They are neither metabolized nor excreted from the body ***(p. 83)***

6.16 *Out of two anticholinesterases, drug 'X' is a tertiary amine while drug 'Y' is a quarternary ammonium compound. Then:*

A. Drug 'X' is likely to be more potent than 'Y'
B. Drug 'X' will be more suitable to be used as a miotic
C. Drug 'Y' will be completely metabolized in the body
D. Drug 'Y' will produce CNS effects ***(p. 84)***

6.14 A	6.15 B	6.16 B

6.17 *Neostigmine is preferred over physostigmine for treating myasthenia gravis because:*

A. It is better absorbed orally
B. It has longer duration of action
C. It has additional direct agonistic action on nicotinic receptors at the muscle end plate
D. It penetrates blood-brain barrier ***(p. 84, 89)***

6.18 *The mechanism by which neostigmine improves contraction of myasthenic muscle involves:*

A. Repetitive binding of the acetylcholine molecules to the same receptors at the muscle end-plate
B. Diffusion of acetylcholine released from motor nerve endings to a wider area activating neighbouring receptors
C. Activation of motor end-plate receptors by neostigmine molecules themselves
D. All of the above ***(p. 89)***

6.19 *Pyridostigmine differs from neostigmine in that:*

A. It is more potent orally
B. It is longer acting
C. It produces less muscarinic side effects
D. It does not have any direct action on N_M receptors ***(p. 84)***

6.20 *Edrophonium is more suitable for differentiating myasthenic crisis from cholinergic crisis because of its:*

A. Shorter duration of action
B. Longer duration of action
C. Direct action on muscle end-plate
D. Selective inhibition of true cholinesterase

(p. 84, 90)

6.17	**C**	**6.18**	**D**	**6.19**	**B**	**6.20**	**A**

6.21 *Which of the following is a relatively cerebroselective anticholinesterase found to afford symptomatic improvement in Alzheimer's disease:*

A. Donepezil
B. Gemfibrozil
C. Pyridostigmine
D. Pyritinol ***(p. 84-85, 439)***

6.22 *Pilocarpine reduces intraocular tension in open angle glaucoma by:*

A. Contracting sphincter pupillae
B. Increasing tone of ciliary muscle
C. Reducing aqueous formation
D. Enhancing uveo-scleral outflow ***(p. 87)***

6.23 *The site of action of miotics for therapeutic effect in angle closure glaucoma is:*

A. Canal of Schlemm
B. Ciliary body
C. Ciliary muscle
D. Sphincter pupillae muscle ***(p. 89)***

6.24 *Currently, the first choice drug for open angle glaucoma is:*

A. Miotic eye drops
B. Ocular α_2 adrenergic agonists
C. Ocular prostaglandin analogues
D. Ocular β adrenergic blockers ***(p. 85, 88)***

6.25 *Timolol eye drops are preferred over pilocarpine eye drops by glaucoma patients because:*

A. Timolol is more effective than pilocarpine
B. Timolol acts by enhancing uveo-scleral outflow
C. Timolol produces less ocular side effects
D. There are no contraindications to timolol

(p. 85, 86)

6.21	**A**	**6.22**	**B**	**6.23**	**D**	**6.24**	**D**	**6.25**	**C**