CNS 2 Final 2012-2013

1. All of the following regarding dexmedetomedine is correct EXCEPT:

(a) It stimulates α2-adrenergic receptors.
(b) Can be used to prolong the action of a local anesthetic.
(c) Inhibits the release of substance P.
(d) Blocks calcium channels.
(e) Increases firing of inhibitory neurons.

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2. Tolerance during opioid intake occurs concerning all of the following EXCEPT:

(a) Respiratory depressant effect
(b) Constipating actions
(c) Analgesic actions
(d) Emetic actions
(e) Hypotensive effect

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3. All of the following matches regarding sedative-hypnotics are correct EXCEPT:

(a) Ramelteon only acts as a hypnotic.
(b) Flumazenil is an antidote for sedative-hypnotic drugs.
(c) Thiopental is used for induction of anesthesia.
(d) Midazolam can cause retrograde amnesia.
(e) Phenobarbital has a wide margin of safety.

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4. Resistance to antiepileptic drugs occurs due to:

(a) Reduced bioavailability.
(b) Ineffective dose.
(c) Increased expression of P-glycoprotein gene.
(d) High affinity to plasma proteins.
(e) First order elimination kinetics.

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5. All of the following matches are correct EXCEPT:

(a) Valproic acid inhibits the reuptake of GABA into glial cells and neurones.
(b) Ethosuximide reduces low-threshold calcium currents in the thalamus.
(c) Lamotrigine binds to a specific synaptic vesicular protein.
(d) Primidone acts on GABA receptors of barbiturates.
(e) Topiramate blocks the excitatory effect of NMDA glutamate receptors.

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6. All of the following are correct matches regarding adverse effects EXCEPT:

(a) Ethosuximide → Euphoria
(b) Valproic acid → Hepatic toxicity
(c) Tiagabine → Decreased concentration
(d) Vigabatrin →Aplastic anemia
(e) Phenytoin → Nystagmus

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7. Which of the following statements regarding parkinsonism drugs is CORRECT:

(a) Levodopa's effects can be improved upon administration with a MOA-A inhibitor.
(b) Selegiline has a high D2 receptor affinity.
(c) Tolcapone causes minimal hepatic toxicity.
(d) Amantadine is a good replacement for Levodopa.
(e) Entacapone can be used to aid Levodopa use for users with response fluctuations.

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8. All of the following are correct matches regarding adverse effects EXCEPT:

(a) Bromocriptine → Diarrhea
(b) Levodopa → Arrhythmias
(c) Selegiline → Insomnia
(d) Amantadine →Confusion
(e) Pergolide → Valvular heart disease

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9. Which of the following is not caused by antipsychotics:

(a) Emesis
(b) Amenorrhea
(c) Dystonic reactions
(d) Gynecomastia
(e) Seizures

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10. All of the following regarding antipsychotics is correct EXCEPT:

(a) Chlorpromazine →Sedative and hypotensive actions.
(b) Clozapine → No effect at all on prolactin levels in the body.
(c) Thioridazine →Causes prolongation of QT interval.
(d) Olanzapine → Low extrapyramidal toxicity and medium sedating actions.
(e) Quetiapine → High extrapyramidal toxicity and medium sedating actions.

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11. All of the following are associated with depression EXCEPT:

(a) Decreased levels of BDNF.
(b) Reduced levels of dopamine, norepinephrine and serotonin.
(c) Down regulation of the hypothalamic-pituitary-adrenal axis.
(d) High levels of cortisol in the body.
(e) Thyroid gland dysregulation.

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12. All of the following are correct withdrawal syndrome signs EXCEPT:

(a) Canabinoids → Insomnia
(b) Amphetamine → Tachycardia
(c) MDMA → Aggression
(d) Alcohol → Tremors and vomiting
(e) Nicotine → Irritability

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13. All of the following are correct regarding drugs of abuse EXCEPT:

(a) Canabinoids → Vomiting
(b) LSD → Flashbacks
(c) Phencyclidine → Psychosis
(d) Cocaine → Loss of appetite
(e) MDMA → Hyperthermia

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14. All of the following are true regarding drugs used for glaucoma EXCEPT:

(a) Latanoprost → Increases aqueous humor outflow through the uveoscleral pathway.
(b) Betaxolol → Increases aqueous humor outflow through the Canal of Schlemm.
(c) Apraclonidine → Decreases fluid outflow through the uveoscleral pathway.
(d) Pilocarpine → Decreases aqueous humor production in the ciliary process.
(e) Acetozolamide → Increases fluid outflow through the Canal of Schlemm.

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15. All of the following matches are correct EXCEPT:

(a) Bupropion → Can occupy some dopamine transporters in the brain.
(b) Fluoxetine → Increases serotonin levels at the synapse.
(c) Amitriptyline → Sedative and anti-muscarinic actions.
(d) Fluvoxamine → Not used for chronic pain.
(e) Trazodone → α2 adrenoreceptor antagonist.

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16. All of the following regarding drugs used for migraine is correct EXCEPT:

(a) Propranolol → Used for migraine prevention.
(b) Olcegepant → CGRP receptor antagonist
(c) Sumatriptan → Mixed with coffee to increase its absorption.
(d) Ergotamine → Used in the prodrome phase.
(e) Frovatriptan → Not to be used in vascular disorders.

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17. All of the following are caused by hypertension EXCEPT:

(a) Lacunar infarcts.
(b) Slit hemorrhages.
(c) Lobar hemorrhages.
(d) Acute hypertensive encephalopathy.
(e) Hyaline arteriolar sclerosis.

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18. All of the following is correct regarding subarachnoid hemorrhages EXCEPT:

(a) The most common cause is rupture of a saccular aneurysm.
(b) Is associated with hereditary hemorrhagic telangiectasia.
(c) Mostly occur in the anterior circulation.
(d) Can be multiple.
(e) Rupture usually occurs at the apex of the aneurysm.

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19. The type of arterio-venous malformation that can cause congestive heart failure in infants is:

(a) Capillary telangiectasia
(b) Cavernous hemangiomas
(c) Arteriovenous malformation
(d) Venous angiomas
(e) Cerebral amyloid angiopathy

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20. The most common location of fusiform atherosclerotic aneurysms is:

(a) Basilar artery
(b) Anterior cerebral artery
(c) Vertebral artery
(d) Anterior communicating artery
(e) Posterior communicating artery

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21. Which of the following mutations is associated with oligodendrogliomas:

(a) p53 tumor suppressor gene inactivation
(b) IDH1 gene mutation
(c) RB gene mutation
(d) PI3K gene mutation
(e) 1p and 19q codeletions

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22. All of the following are features of pilocytic astrocytomas EXCEPT:

(a) Relatively benign.
(b) Can affect the optic pathways and tracts.
(c) Is often associated with cyst formation.
(d) Occur in children and young adults.
(e) Most common location is the spinal cord.

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23. All of the following tumor locations are correct EXCEPT:

(a) Myxopapillary ependymoma → Filum terminale
(b) Medulloblastoma → Cerebellum
(c) Dysembryoplastic neuroepithelial tumor → Superficial temporal lobe
(d) Central Neurocytoma → Foramen of Monro
(e) Ependymoma → Spinal cord in children

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24. All of the following are true regarding grade II meningiomas EXCEPT:

(a) Clear variant.
(b) Brain invasion.
(c) Choroid variant.
(d) Small cells, prominent nuclei and necrosis.
(e) More than 19 mitotic figures/10 HPF.

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25. The brain tumor associated with tuberous sclerosis is:

(a) Glioblastoma
(b) Hamartoma
(c) Subependymal giant cell astrocytoma
(d) Grade II astrocytoma
(e) Oligodendroglioma

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26. All of the following regarding contusions is correct EXCEPT:

(a) Occur due to a blunt head trauma.
(b) Pia-arachnoid is not breached.
(c) Red neurones will appear following injury within 24 hours.
(d) The crests of the gyri are mostly affected.
(e) Mostly occur in the occipital lobe.

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27. All of the following regarding subdural hematoma is correct EXCEPT:

(a) Organized hematomas will attach to the above dura.
(b) Chronic subdural hematomas are characterized by recurrent bleeding.
(c) Fibrosis results in the formation of a thin subdural membrane.
(d) Blood following injury extends into the depths of the sulci.
(e) Occurs mostly in infants and elderly.

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28. All of the following regarding Wernicke's encephalopathy is correct EXCEPT:

(a) Abnormalities in eye movement.
(b) Mammillary body hemorrhagic foci.
(c) Ataxia.
(d) Due to thiamine deficiency.
(e) Irreversible disorder.

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29. Which of the following results in the formation of Alzheimer type II cells:

(a) Hypoglycemia
(b) Thiamine deficiency
(c) Hepatic encephalopathy
(d) Ethanol toxicity
(e) Vitamin B_{12} deficiency

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30. All of the following regarding multiple sclerosis is correct EXCEPT:

(a) Manifestations rarely are apparent after age of 50.
(b) Plaques are of the same age.
(c) Relapses and remissions.
(d) Optic nerves can be affected.
(e) CSF shows antibodies with oligoclonal bands.

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31. Neuromyelitis optica is due to:

(a) Antibodies against water channel aquaporin-2.
(b) Reactivation of JC virus in immunosuppressed individuals.
(c) Antibodies against water channel aquaporin-4.
(d) Rapid correction of hypoglycemia.
(e) Viral infection of the neurones of the optic pathways.

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32. All of the following are mutations associated with Alzheimer's disease EXCEPT:

(a) Trisomy of chromosome 21.
(b) Presence of ApoE4.
(c) Mutations in presenilin-3 gene.
(d) Mutations in APP.
(e) Mutations in presenilin-2 gene.

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33. All of the following is correct regarding neurodegenerative disorders EXCEPT:

(a) Neuritic plaques consist of amyloids surrounded by dystrophic neurites.
(b) Neurofibrillary tangles contain tau protein.
(c) Deposition of AL amyloids in the cerebral cortex in the case of Alzheimer's disease.
(d) Intranuclear aggregates containing an expanded polyglutamine tract in HD.
(e) A+ B

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34. All of the following are correct locations for deposition of amyloids in Alzheimer's disease EXCEPT:

(a) Amygdala
(b) Nucleus basalis of Meynert
(c) Entorhinal cortex
(d) Primary motor and sensory cortices
(e) Hippocampus

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35. Pick's disease is due to:

(a) Deposition of synuclein protein.
(b) FTLD-tau protein inclusion bodies.
(c) Huntingtin protein deposition.
(d) FTLD-TDP43 protein inclusion bodies.
(e) Mutations in SOD-1 gene.

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36. All of the following regarding Parkinson's disease is correct EXCEPT:

(a) Lesions usually appear in the medulla and pons before the substantia nigra.
(b) Lewy bodies contain deposits of synuclein protein.
(c) Death usually occurs due to infections or trauma from everyday falls.
(d) Lesions can be found in one of the cranial nerve nuclei causing autonomic disturbances.
(e) When dementia arises within 5 years of the onset of motor symptoms, it is referred to as Lewy body dementia.

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37. All of the following are affected in amyotrophic lateral sclerosis EXCEPT:

(a) Lower motor neurons in the spinal cord supplying the upper limbs.
(b) Upper motor neurons in the brain stem supplying the muscles of speech.
(c) Upper motor neurons in the brain stem supplying the extraocular muscles.
(d) Upper motor neurons in the brain stem supplying the muscles of swallowing.
(e) Lower motor neurons in the spinal cord supplying the lower limbs.

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38. All of the following are correct regarding Duchenne Muscular Dystrophy EXCEPT:

(a) Characterized by myofiber necrosis and regeneration of muscle fibers.
(b) Manifests clinically at the age of 5 years.
(c) Heart failure usually takes place.
(d) More common and severe than Becker's Muscular Dystrophy.
(e) Cognitive function is usually spared and not affected.

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39. All of the following are correct regarding myasthenia gravis EXCEPT:

(a) 70% of the cases are due to thymomas.
(b) Is associated with diplopia and ptosis.
(c) The minority of cases are caused by antibodies against Musk.
(d) Treatment usually involves using immunosuppressants and cholinesterase inhibitors.
(e) Mainly is caused by antibodies against the post-synaptic acetylcholine receptors.

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40. All of the following are associated with PICA (posterior inferior cerebellar artery) syndrome EXCEPT:

(a) Vomiting
(b) Ataxia
(c) Difficulty in swallowing
(d) Dilatation of the pupil
(e) Nasal tone of speech

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41. All of the following matches are correct EXCEPT:

(a) Auditory pathway → Inferior colliculus
(b) Visual reflex → Superior colliculus
(c) Corneal reflex → Primary sensory nuclei of trigeminal
(d) Taste pathway → Vagus nerve
(e) Hypoglossal lesion → Deviation of the tip of the tongue towards the side of the lesion.

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42. All of the following are considered GVE EXCEPT:

(a) Superior salivatory nucleus
(b) Inferior salivatory nucleus
(c) Edinger–Westphal nucleus
(d) Dorsal nucleus of vagus
(e) Solitary nucleus

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43. Which of the following imaging techniques is least likely to be used in assessing brain lesions:

(a) Computed Tomography (CT)
(b) Magnetic Resonance Imaging (MRI)
(c) Contrasted images
(d) Skull X-ray
(e) Positron Emission Tomography (PET)

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44. A patient presented with right-sided hemiplegia and paralysis of the left 3rd cranial nerve. Which of the following is the most likely location of this lesion:

(a) Motor cortex
(b) Corona Radiata
(c) Left Midbrain
(d) Right pons
(e) Left Medulla

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45. A lesion that occurs in the left Meyer's loop will cause which of the following abnormalities in the visual field:

(a) Upper right quadrantanopia
(b) Upper left quadrantanopia
(c) Bilateral hemianopia
(d) Left homonymous hemianopia
(e) Right homonymous hemianopia

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46. All of the following regarding Korsakoff's syndrome is correct EXCEPT:

(a) Due to thiamine deficiency.
(b) Occurs in the setting of chronic alcoholism.
(c) Defect in the mammillary body.
(d) Patient loses long term memory but retains short term memory.
(e) None of the above.

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47. A patient following a cold, lost the ability to taste things temporarily. This could be due to:

(a) The cold damaged the taste pathway fibers, and lead to the loss of taste sensation.
(b) The cold virus damaged the taste buds on the surface of the tongue.
(c) The cold affected the olfactory pathway, which led to loss of taste sensation temporarily.
(d) The cold virus blocked signal transmission along the taste fibers.
(e) The cold irritated the olfactory pathway and this caused increased secretions.
