



Student Name : .....

Question No. 1: Multiple choice questions, circle the correct answer 50 M

Which of the following is the most appropriate treatment of renal osteodystrophy?

- a) Cholecalciferol and calcium supplementation
- b) Alfacalcidol and calcium supplement
- c) Erythropoietin
- d) Calcium supplementation

Which of the following glucocorticoids produces the least sodium retention?

- a) Cortisone
- b) Hydrocortisone
- c) Prednisolone
- d) Dexamethasone
- e) Fludrocortisone

pharmacology III  
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Which of the following classes of compounds stimulates the release of insulin from pancreatic  $\beta$ -cells?

- a) Progestins
- b) Biguanides
- c)  $\alpha$ -Glucosidase inhibitors
- d) Thiourylenes
- e) Sulfonylureas

Insulin causes reduction in blood sugar level by the following mechanisms, EXCEPT:

- a) Increased glucose uptake in the peripheral tissue
- b) Reduction of breakdown of glycogen
- c) Diminished gluconeogenesis
- d) Decreased glucose absorption from the gut

Thyroid hormones produce various pharmacological effects. Indicate the wrong statement(s).

- a) Decline of the basal metabolic rate in the body
- b) Increase in the rate and force of contraction of the heart
- c) Increase in the blood cholesterol level
- d) Increase in the heat production

6. Which of the following insulins can be administered intravenously?

- a) Regular insulin
- b) Isophane insulin (NPH)
- c) Protamine zinc insulin (PZI)
- d) All of the above

7. Glucocorticoids have not been proved to be effective in the treatment of

- a) Acute lymphocytic leukemia
- b) Addison's disease
- c) Asthma
- d) Chemotherapy-induced vomiting
- e) Osteoporosis

8. Which of the following glucocorticoids is a long-acting drug?

- a) Prednisolon
- b) Dexamethasone
- c) Triamcinolone
- d) All of the above

9. Correct statements about glucocorticoids include all of the following, EXCEPT:

- a) Effects of glucocorticoids are mediated by widely distributed glucocorticoid receptors that are in the super family of nuclear receptors.
- b) Glucocorticoids have dose-related metabolic effects on carbohydrate, protein, and fat metabolism.
- c) Glucocorticoids have pro-inflammatory effects.
- d) Glucocorticoids have catabolic effects in lymphoid and connective tissue, muscle, fat, and skin.

10. What is the mechanism of action of sitagliptin?

- a) PPAR gamma agonist
- b) GLP 1 analogue
- c) K<sup>+</sup>ATP channel activator
- d) Dipeptidyl peptidase IV inhibitor

11. Which of the following is the main mechanism of action of metformin?

- a) Reduced peripheral insulin sensitivity
- b) Increased peripheral glucose uptake
- c) Increased Lipolysis
- d) Increased insulin secretion from pancreas
- e) Reduced Hepatic Glucose Output

What is the mechanism of action of carbimazole?

- a) Destruction of functioning thyroid cells
- b) Inhibition of 5'-deiodinase
- c) Inhibition of the iodination of tyrosine
- d) Inhibition of thyroglobulin proteolysis
- e) Conversion to methimazole, which blocks the TSH receptor

Which one of the following anticonvulsants has been associated with the development of polycystic ovarian syndrome (PCOS)?

- a) Vigabatrin
- b) Sodium valproate
- c) Phenobarbitone
- d) Phenytoin

A newly diagnosed diabetic patient was started on metformin in addition to being given appropriate dietary advice. He asks you about dangerous side effects of the drug. Which rare but serious side effect of metformin treatment should be considered?

- a) Rhabdomyolysis
- b) Lactic acidosis
- c) Anaphylaxis
- d) Pulmonary fibrosis
- e) Cardiotoxicity

Which of the following inhaled anesthetics is an induction agent of choice in patient with airway problems?

- a) Desflurane
- b) Nitrous oxide
- c) Halothane
- d) None of the above

Indicate the inhaled anesthetic, which should be avoided in patients with a history of seizure disorders:

- a) Enflurane
- b) Nitrous oxide
- c) Sevoflurane
- d) Desflurane

17. Which of the following inhaled anesthetics decreases methionine synthase activity and causes megaloblastic anemia?
- Desflurane
  - Halothane
  - Nitrous oxide
  - Soflurane
18. Ketamine anesthesia is associated with:
- Cardiovascular stimulation
  - Increased cerebral blood flow, oxygen consumption and intracranial pressure
  - Disorientation, sensory and perceptual illusions, and vivid dreams following anesthesia
  - All of the above
19. Oxytocin produces the following effects:
- It causes contraction of the uterus
  - It assists the progress of spermatozoa into the uterine cavity
  - It brings about milk ejection from the lactating mammary gland
  - All of the above
20. Thyroid hormones produce various pharmacological effects. Indicate the wrong statement(s).
- Decline of the basal metabolic rate in the body
  - Increase in the rate and force of contraction of the heart
  - Increase in the blood cholesterol level
  - Increase in the heat production
21. Currently used antithyroid drugs include the following, EXCEPT:
- Propylthiouracil
  - Diatrizoate sodium
  - Methimazole
  - Potassium perchlorate
22. Currently used alpha-glucosidase inhibitors include the following, EXCEPT:
- Pioglitazone
  - Acarbose
  - Miglitol
  - All of the above

**Alpha-glucosidase inhibitors act by:**

- a) Diminishing insulin resistance by increasing glucose uptake and metabolism in muscle and adipose tissues
- b) Competitive inhibiting of intestinal alpha-glucosidases and modulating the postprandial digestion and absorption of starch and disaccharides
- c) Reducing the absorption of carbohydrate from the gut
- d) Stimulating the beta islet cells of pancreas to produce insulin

**The action of insulin is potentiated by:**

- a) Sulphonylureas
- b) Glucagon
- c) Biguanides
- d) None of the above

**Which of the following statements concerning the anti-inflammatory effect of glucocorticoids is TRUE?**

- a) Anti-inflammatory effect of glucocorticoids results from inhibition of cyclooxygenase
- b) Anti-inflammatory effect of glucocorticoids results from inhibition of phospholipase A2 and reducing prostaglandin and leukotriene synthesis
- c) Induction of cyclooxygenase II expression which results in reducing amount of an enzyme available to produce prostoglandins
- d) All of the above

**Anti-inflammatory effect of glucocorticoids is caused by**

- a) Reducing the prostaglandin and leukotriene which results from inhibition of phospholipase A2
- b) Reducing macrophages migration into the site of inflammation
- c) Decreasing capillary permeability
- d) All of the above

**Serious side effects of glucocorticoids include the following, EXCEPT:**

- a) Acute peptic ulcers
- b) Iatrogenic Cushing's syndrome (rounding, puffiness, fat deposition and moon faces)
- c) Salicylism (vomiting, tinnitus, decreased hearing, and vertigo)
- d) Osteoporosis

**Indications of glucocorticoids are following, EXCEPT:**

- a) Gastrointestinal diseases (inflammatory bowel disease)
- b) Postmenopausal hormonal therapy
- c) Inflammatory conditions of bones and joints (arthritis, bursitis, tenosynovitis)
- d) Skin diseases (atopic dermatitis, dermatoses, localized neurodermatitis)

Which of the following antiseizure drugs produces a voltage-dependent inactivation of sodium channels?

- a) Lamotrigine
- b) Carbamazepin
- c) Phenytoin
- d) All of the above

Indicate an antiseizure drug, inhibiting central effects of excitatory amino acids:

- a) Ethosuximide
- b) Lamotrigine
- c) Diazepam
- d) Tiagabine

The drug for partial and generalized tonic-clonic seizures is:

- a) Carbamazepine
- b) Valproate
- c) Phenytoin
- d) All of the above

Indicate an anti-absence seizure drug:

- a) Valproate
- b) Phenobarbital
- c) Carbamazepin
- d) Phenytoin

All of the following statements about growth hormone are true, EXCEPT:

- a) It may stimulate the synthesis or release of somatomedins
- b) Low levels of insulin-like growth factor (IGF)-1 are associated with dwarfism
- c) Hypersecretion can result in acromegaly
- d) It is contraindicated in subjects with closed epiphyses.

The most effective drug for stopping generalized tonic-clonic status epilepticus in adults is:

- a) Lamotrigine
- b) Ethosuximide
- c) Clonazepam
- d) Zonisamide

Phenytoin is used in the treatment of:

- a) Petit mal epilepsy
- b) Grand mal epilepsy
- c) Myoclonic seizures
- d) All of the above

29. A 38-year-old woman develops palpitations, weight loss, and heat intolerance. On examination she has a mild tremor, an enlarged thyroid, and resting tachycardia. Biochemical tests confirm the diagnosis and she is started on methimazole. Which of the following is the most likely mechanism of this drug?
- a) inhibition of iodine uptake
  - b) inhibition of thyroidal organic binding and coupling reactions
  - c) lowering serum calcium
  - d) adrenal suppression
30. A diabetic patient is currently being treated with metformin and sulphonylurea. However, his diabetes is still sub optimally controlled. His consultant decides to add pioglitazone. What is the mechanism of action of this drug?
- a) Increases insulin secretion
  - b) Increases insulin sensitivity
  - c) Inhibits glucose absorption
  - d) Inhibits gluconeogenesis
  - e) Increases glucose elimination
31. Which of the following is a stimulus for insulin secretion?
- a) hypoxia
  - b) hypothermia
  - c) beta2-adrenergic receptor antagonists
  - d) ketones
32. Which of the following antiseizure drugs produces enhancement of GABA-mediated inhibition?
- a) Ethosuximide
  - b) Carbamazepine
  - c) Phenobarbital
  - d) Lamotrigine
33. Indicate an antiseizure drug, which has an impotent effect on the T-type calcium channels in thalamic neurons?
- a) Carbamazepin
  - b) Lamotrigine
  - c) Ethosuximide
  - d) Phenytoin

41. Dose-related adverse effect caused by phenytoin is:
- a) Physical and psychological dependence
  - b) Exacerbated grand mal epilepsy
  - c) Gingival hyperplasia
  - d) Extrapyramidal symptoms
42. The antiseizure drug, which induces hepatic microsomal enzymes, is:
- a) Lamotrigine
  - b) Phenytoin
  - c) Valproate
  - d) None of the above
43. The drug of choice for partial seizures is:
- a) Carbamazepin
  - b) Ethosuximide
  - c) Diazepam
  - d) Lamotrigine
44. Which of the following antiseizure drugs is also effective in treating trigeminal neuralgia?
- a) Primidone
  - b) Topiramate
  - c) Carbamazepine
  - d) Lamotrigine
45. The most common dose-related adverse effects of carbamazepine are:
- a) Diplopia, ataxia, and nausea
  - b) Gingival hyperplasia, hirsutism
  - c) Sedation, physical and psychological dependence
  - d) Hemeralopia, myasthenic syndrome
46. Indications of bromocriptine are following, EXCEPT:
- a) Prolactin-secreting adenomas
  - b) Amenorrhea-Galactorrhea
  - c) Prolactin deficiency
  - d) Acromegaly
47. Which of the following antiseizure drugs is a prodrug, metabolized to phenobarbital?
- a) Phenytoin
  - b) Primidone
  - c) Felbamate
  - d) Vigabatrin



For patients who have been on long-term therapy with a glucocorticoid and who now wish to discontinue drug, gradual tapering of the glucocorticoid is needed to allow recovery of

- a) Depressed release of insulin from pancreatic B cells
- b) Hematopoiesis in the bone marrow
- c) Normal osteoblast function
- d) The control by vasopressin of water excretion
- e) The hypothalamic-pituitary-adrenal system

The mechanism of vigabatrin's action is:

- a) Direct action on the GABA receptor-chloride channel complex
- b) Inhibition of GABA aminotransferase
- c) NMDA receptor blockade via the glycine binding site
- d) Inhibition of GABA neuronalreuptake from synapses

Indicate the anesthetic, which is an inhibitor of NMDA glutamate receptors:

- a) Thiopental
- b) Halothane
- c) Ketamine
- d) Sevoflurane

Inhaled anesthetics and intravenous agents having general anesthetic properties:

- a) Directly activate GABA A receptors
- b) Facilitate GABA action but have no direct action on GABA A receptors
- c) Reduce the excitatory glutamatergic neurotransmission
- d) Increase the duration of opening of nicotine-activated potassium channels

Gynaecomastia can be treated with

- a) Chlorpromazine
- b) Cimetidine
- c) Bromocriptine
- d) Metoclopramide

**Question No. II      20M**

**Discuss of the followings**

1- Explain with examples how drugs used in treatment of hyperthyroidism nearly meet to overcome thyroid hormone biosynthesis.

main story ( release, secretion, resistance and deficiency that result in diabetic complication and drugs that  
are its release) . discuss this story in details.

ulation, re  
associated w

**Question No. III**

**30 M**

**Give mechanism of action , therapeutic uses and side effects for 7 of the following drugs**

Drug	Mechanism	Clinical uses	Possible side effects
Sodium valproate			
2- Resperidone			
3-Desmopressin			
4- Fludrocortizone			
5- Calcitonin			

3- Specific intracellular mechanism of action, factor regulate their secretion, Receptor up regulation, down regulation, feedback mechanism, escape phenomena, withdrawal symptoms, all of these associated hormones. Discuss by examples.

<b>6-Aminogluthemide</b>			
<b>7- Chloropromazine</b>			
<b>8- Thiopental</b>			

Question No. IV. Please, state which statement is true and which is false  
correct the false. 20 M

- ( ) Cortisone is secreted in response to ACTH from the posterior pituitary and is suppressed by negative feedback.
- ( ) Hashimoto's thyroiditis is an autoimmune disease in which the thyroid gland is attacked by antibodies.
- ( ) Epilepsy can be due to genetic, CNS infection, high fever and an unknown cause.
- ( ) Carbamazepine has several side effects as gingival hyperplasia, diplopia and hirsutism.
- ( ) Gabapentin enhances GABA release but pregabalin binds to Ca channels and inhibits excitatory NTs.
- ( ) Sitagliptin stimulates dipeptidyl peptidase-4 enzyme so increases Glucagon-like peptide (GLP-1) and Gastric inhibitory peptide (GIP) leading to increased insulin secretion.
- ( ) Rosiglitazone increases risk of coronary heart disease and heart attacks but pioglitazone may cause bladder cancer.
- ( ) Acarbose acts by delaying the digestion of carbohydrates by inhibiting alpha-glucosidase enzyme in the small intestine which is responsible for hydrolysis of carbohydrates.
- ( ) Pramlintide is a new adjunct for diabetes type I and type II who use insulin to allow patients to use less insulin and decrease postprandial hyperglycemia.
- ( ) Physiological doses of glucocorticoids can result in increased gluconeogenesis, lipolysis and elevation of red blood count.
- ( ) Pegvisomant is an analogue of growth hormone that is used for treatment of GH deficiency in children.

Great success for all 'in sha' allh

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