

ANMC

MBBS-F17-020
①Physiology 1st term test 2nd year

(Kidney + Endocrinology)

1. Saleem get injury due to which there is isosmotic reduction in ECF, by mistake hypotonic saline is infused to patient, What will happen to ICF & ECF volumes & osmolarities.
 - a) ICF volume will be increased
 - b) ECF volume will be increased
 - c) **Both ICF & ECF volume be increased & osmolarities will be decreased** ✓
 - d) Both osmolarities will be increased
 - e) No change is osmolarities
2. By which of the following substances total body water is measured
 - a) **Radioactive water (tritium $3\text{H}_2\text{O}$)** ✓
 - b) Radioactive ^{22}Na
 - c) ^{51}Cr labeled RBCs
 - d) Evans blue dye
 - e) ^{125}I -Iothalamate
3. An elderly patient who had vomiting & diarrhea & was in coma on lab investigation, serum sodium concentration was 115mEq/L . This patient most likely has
 - a) Hyponatremia Overhydration
 - b) **Hyponatremia dehydration** ✓
 - c) Hypernatremia dehydration
 - d) Hypernatremia Overhydration
 - e) Diabetes insipidus
4. The woman has plasma osmolarity of 300mosmole/L urine osmolarity is 1200mosmole/L , the correct diagnosis is
 - a) Use of Diuretics
 - b) Water deprivation
 - c) Central diabetes insipidus
 - d) **Peripheral diabetes insipidus** ✓
 - e) Drinking large amount of distilled water
5. Which one is not component of glomerular filtration barrier.
 - a) Fenestrated capillary endothelium
 - b) **Macuadensa** ✓
 - c) Basement membrane
 - d) Podocytes
 - e) Slit pores

person who is having kidney stone which are causing urinary tract obstruction. Which of the following pressure changes lead to decreased GFR?

- 1) Increase glomerular capillary oncotic pressure
- 2) **Increase glomerular capillary hydrostatic pressure** ✓
- 3) Increase hydrostatic pressure in Bowman's capsule
- 4) Increase net filtration pressure
- 5) Decrease renal flow

7. Net filtration pressure is

- a) 30 mm Hg
- b) 20 mm Hg
- c) **10 mm Hg** ✓
- d) 5 mm Hg
- e) 2 mm Hg

8. Which Hormone causes afferent dilation & increased GFR

- a) Nor epinephrine
- b) Epinephrine
- c) **Prostaglandins** ✓
- d) Endothelium
- e) Adrenaline

9. Hyperkalemia causes increase in:

- a) Release of renine
- b) **Secretion of aldosterone** ✓
- c) Secretion of ADH
- d) Release of natriuretic hormone
- e) Production of angiotensin II

10. Chronic acidosis will have

- a) No effect on K^+ excretion
- b) **K^+ excretion is increased due to inhibiting sodium chloride & water reabsorption** ✓
- c) K^+ secretion is decreased
- d) K^+ excretion is decreased
- e) decrease secretion of Na^+

11. Major stimulus for ADH secretion is

- a) Decrease plasma osmolarity
- b) Increase blood volume
- c) Increased blood pressure
- d) **Nausea** ✓
- e) Alcohol

12. 94% of Plasma osmolarity is due to

- a) Sodium
- b) Bicarbonate & chloride
- c) **Both a & b** ✓
- d) Albumin
- e) Glucose

13. Which statement about filtration fraction is incorrect

- a) Average about 0.2

- Which of the following
-) Indicate 20% of Plasma is filtrate
 -) Decrease with increase Colloidal osmotic pressure
 -) **Increase with increase Colloidal osmotic pressure**
 -) Is equal to GFR renal plasma flow
4. What is true regarding Renin secretion?
-) Directly proportional to increase K^+ in proximal convoluted tubules
 -) **Inversely proportional to Na^+ in distal convoluted tubules**
 -) Inversely proportional to K^+ levels
 -) Directly proportional to ADH levels
 -) Directly proportional to glucose concentration
5. Which one is the extra cellular buffers:
-) **Bicarbonate**
 -) Plasma proteins
 -) Plasma lactate
 -) Inorganic phosphate
 -) Proteins
6. The Anion gap will increase with an increase in the plasma concentration of
-) **Sodium**
 -) Potassium
 -) Chloride
 -) Bicarbonate
 -) Lactate
7. Which factor increase H^+ secretion & HCO_3^- reabsorption
-) Decrease PCO_2
 -) Decrease Aldosterone
 -) **Increased Aldosterone** ✓
 -) Decrease Angiotensin
 -) Hyperkalemia
8. Chronic renal failure is caused by
-) Hemorrhage
 -) Diarrhea
 -) Burn
 -) Toxin
 -) **Diabetes mellitus** ✓
9. Which factor will increase Extracellular Potassium?
-) Insulin
 -) **Addison's disease** ✓
 -) Increase Aldosterone secretion
 -) Alkalosis
 -) B adrenergic stimulation
10. Choose the hormone that doesn't need the Adenyl Cyclase -cAMP second messenger system
-) Adrenocorticotrophic hormone
 -) Glucagon
 -) Parathyroid hormone
 -) **Thyroid hormone** ✓
 -) Follicle stimulating hormone
- endocrinology*

21. The down regulation of receptors can occur as a result of
- Activation of intracellular protein signaling molecules
 - Increased production of receptors
 - Increased availability of receptors to act with hormone
 - Inactivation of some of receptors molecule**
 - Decrease hormone concentration
22. Which is the protein stimulator of Growth Hormone secretion?
- Somatomedins
 - Hyperglycemia
 - Hypoglycemia** ✓
 - Increase free fatty acids
 - Obesity
23. One person who after puberty is having enlargement of Hands & Feet, What is this condition called
- Gigantism
 - Acromegaly**
 - Rickets
 - Conns syndrome
 - Panhypopituitarism
24. The active form of Thyroid hormone is
- Moniodotyrosine
 - Diiodotyrosine
 - Triiodothyronine (T3)**
 - Thyroxine (T4)
 - Reverse T3 (RT3)
25. Which one is not the function of thyroid hormone
- Increases cellular metabolic activity
 - Increase free fatty acids
 - Increase Basal metabolic rate
 - Increase body weight**
 - Decrease concentration of cholesterol
26. Thyroid hormone deficiency in early infant leads to:
- Gigantism
 - Diabetes insipidus
 - Osteoporosis
 - Marfan's syndrome
 - Cretinism**
27. A 40 years old lady is complaining of increased body weight, Mental sluggishness, Oedematous appearance throughout the body, in your opinion the woman is suffering from
- Graves disease
 - Thyrotoxicosis
 - Hyperthyroidism
 - Hypothyroidism**
 - Toxic Goitre
28. A common clinical feature of myxedema is

- a) Increase sweating
 b) **Increase sleep**
 c) Weight loss
 d) Tachycardia
 e) Palpitation
29. Hypothyroidism is associated with increase level of?
 a) **Cholesterol**
 b) Albumin
 c) Thyroid binding globulin
 d) Iodine
 e) Ca⁺⁺
30. One person had high BP, went to doctor on lab investigation he was found to have Hypokalemia & Hypernatremia, what is most probable diagnosis
 a) Addison's disease
 b) Grave's disease
 c) **Cons syndrome**
 d) Myxedema
 e) Hypothyroidism
31. One patient who has Hyperglycemia, but is resistant to the action of Insulin, What is most probable diagnosis
 a) Gestational D;M
 b) **Adrenal diabetes**
 c) D;M type I
 d) D;M type II
 e) Diabetes insipidus
32. The active form of vit. D is?
 a) Calcitonin
 b) **1,24 Dihydroxycholecalciferol**
 c) Parathyroid Hormone
 d) Cholecalciferol
 e) None of above
33. Melanin pigmentation is increased in patients with Addisons disease, the most probable reason is?
 a) Dec secretion of ACTH
 b) Inc secretion of Cortisol
 c) **Inc secretion of ACTH**
 d) Inc secretion of Aldosterone
 e) None of above
34. Anti inflammatory effects of cortisol is due to:
 a) Release of chemical substances from damaged tissue
 b) Increase blood flow in damage area
 c) Leakage of large quantities of plasma out of capillaries
 d) **Decrease movement of leukocytes to inflamed area**
 e) Ingrowth of fibrous tissue after some days
35. A 35 years old patient of rheumatoid arthritis was on corticosteroids for last two years, She developed truckle obesity, moon like face, skin rashes, bone weakness, her B.P is 160 mm of Hg. What is your diagnosis?
 a) Addison's disease

- 1) **Cushing syndrome**
-) Pheochromocytoma
-) Hyperthyroidism
-) Conns syndrome
6. Hormone that stores carbohydrates, Lipids and Proteins in body is called
-) Growth hormone
-) Thyroid hormone
-) Cortisol
-) **Insulin**
-) PTH
7. How glucose enters in Skeletal muscle
-) Passive diffusion
-) **Facilliated diffusion with GLUT4**
-) Primary active transport
-) Secondary active transport
-) Pinocytosis
8. Which statement about Insulin is FALSE
-) Promotes Glucose uptake and metabolism
-) Storage of Glycogen in muscle
-) Promotes conversion of excess glucose into fatty acids
-) **Promote Gluconeogenesis**
-) Promotes fat synthesis & storage
9. Urine examination of diabetic patient was examine, It was found to contain Ketone bodies. What do you think is most likely cause of formation of these ketone bodies?
- Increase secretion of Insulin
-) **Uncontrolled diabetes mellitus**
- Hypoglycemia
- Protein synthesis
- None of above
10. The major effect of Glucagon on Glucose metabolism is?
- Increased Gluconeogenesis & Glycogenolysis in liver**
- Inhibition of insulin secretion
- Inhibition of somatostatin secretion
- Has effecton Adipose tissue
- Develops insulin resistance
11. Glucagon follows which of the following signaling pathway for its cellular effects?
- cAMP pathway (secondary messenger system)**
- cGMP pathway (secondary messenger system)
- Inositol triphosphate pathway (secondary messenger system)
- Tyrosin kinase pathway (enzyme linked)
- None of above
12. Brain, Retina & germinal epithelium of Gonads use only neutrient for their required energy
- Fatty acids
- Triglycerides
- Cholesterol

the TP₂.

- a) Glucose
- b) Proteins

43. In Hyperparathyroidism?
- a) Bones become strong
 - b) Osteoclastic activity is decreased
 - c) Plasma conc. Of Ca⁺⁺ is decreased
 - d) **Bones become weak spontaneous fractured**
 - e) Plasma conc. Of phosphate is increased

44. The site for 1,25-dihydroxycholecalciferol formation from its immediate precursor is in the:
- a) Bone
 - b) Liver
 - c) Skin
 - d) **Nephron**
 - e) Bloodstream

45. Which statement regarding the actions of oxytocin is correct?
- a) Contraction of pregnant uterus
 - b) **Milk ejection reflex**
 - c) Relaxation of pregnant uterus
 - d) ~~Both A & B~~