

GENESIS

(Post Graduation Medical Orientation Centre)

Foundation-1 Batch

Total Number- 60

Pass Mark-42

Subject: Renal System

Question 16-30 is based on Single answers

Time: 25 Min

Date: 21/01/20

1. Following statements are true regarding apical transporter

- a) Na⁺-glucose cotransporter- proximal tubule
- b) Na⁺-amino acid – Distal tubule cotransporter
- c) Na⁺-H⁺ exchanges – collecting duct
- d) Na⁺- channel collecting duct
- e) Na-K-2Cl cotransporter-Thin ascending limb of LOH

TF (PCT)F(PCT) TF (Thick Ascending limb)

(Ref: Ganong 25th Page-680)

2. Following statements are true regarding M/A of various diuretics

- a) Acetazolamide Decrease K⁺ secretion
- b) Thiazide inhibits Na-Cl cotransport in the early portion of DCT
- c) Loop diuretics inhibit Na⁺-K⁺- 2Cl Cotransporter in the TALLH
- d) Spironolactone inhibit Na⁺-K⁺ exchange in the collecting tubule by inhibiting the action of Aldosterone
- e) Caffcin Decreases tubular reabsorption of K⁺

F (H+) TTF (Collecting duct)F (only Na+) (Ref: Ganong 25th Page-690)

3. Factors are responsible for increase vasopressin secretion

- a) Standing
- b) Increased ECF volume
- c) Decrease effective osmotic pressure
- d) Pain emotion
- e) Nausea & vomiting

TFF (Increase) TT (Ref Ganong 25th P-696)

4. Factor increases renin secretion

- a) Increased sympathetic activity
- b) Increased circulatory catecholamines
- c) Angiotensin-II
- d) Vasopressin
- e) Prostaglandins

TFFFT (Ref: Ganong- 26th P-703)

5. Regarding erythropoietin, true statements are

- a) In adult, more than 90% comes from kidney
- b) Also extracted from spleen & salivary glands
- c) When renal mass is reduced, the liver compensates the situation
- d) Produced by interstitial cells in the peritubular capillary bed of the kidney & veins of the liver
- e) It is a circulating glycoprotein that contains 165 AA

F (85%) TFF (Perivascular hepatocytes) T

6. Following statements are true, regarding kidney

- a) Have an abundant lymphatic supply that drains directly in left subclavian vein
- b) Renal capsule is thick and tough that limit the swelling of kidney during AKI
- c) The nerve travel along the renal blood vessels
- d) Kidney receives 15% of cardiac output per minutes
- e) The GER in women are 10% lower than men

F (Thoracic duct) F (Thin) TF (20%)T (Ref: Ganong- 25th P-676)

7. Glucose reabsorption

- a) With Na⁺ in the late portion of PCT
- b) Filtered at a rate of 100mg/min
- c) Few milligrams appear in the urine per 24 hours
- d) The amount of reabsorbed is not proportional to the amount of filtered
- e) TmG is about 375 mg/min in men & 300mg/min in women

F (early) TTFT (Ref: Ganong 25th Page-680)

8. Effects of adrenocortical hormone

- a) Aldosterone leads to Na⁺ reabsorption & Cl⁻
- b) In adrenalectomized patient, when aldosterone is injected a latent period of 2-3 days occur before functioning
- c) Mineralocorticoid acts primarily in the collecting duct
- d) These are protein hormone
- e) Liddle syndrome leads to Na⁺ retention & hypertension

TF (10-30 mins) TFT (Ref: Ganong 25th page-688)

9. Agents causing relaxation of mesangial cells

- a) PDGF
- b) ANP
- c) Dopamine
- d) PGE₂
- e) cAMP

FTTTT (Ref: Ganong-25th Page-678)

10. Hydrostatic pressure in renal glomerular capillaries

- a) Is lower than pressure in efferent arterioles
- b) Rises when afferent arterioles constrict
- c) Is higher than in most capillaries at heart level
- d) Falls by 10 per cent when arterial pressure falls by 10 per cent
- e) Falls along the length of the capillary

FFFTT

11. The cells of the distal convoluted tubule

- a) Reabsorb about 50 per cent of the water filtered by the glomeruli
- b) Secrete hydrogen ions into the tubular lumen.
- c) Form NH_4^+ ions
- d) Reabsorb sodium in exchange for hydrogen or potassium ions
- e) Determine the final composition of urine

FTTTF

12. Substances that are freely filtered but not reabsorbed by the kidney are

- a) Creatinine
- b) Urea
- c) Glucose
- d) Bicarbonate
- e) Inulin

TFFFT

13. Na^+ can be transported across the luminal membrane of renal tubular cells by

- a) Co-transport with organic solutes
- b) Sodium potassium ATPase system
- c) Sodium channels
- d) Counter transport with H^+
- e) Counter transport with Ca^{2+}

TFFTF

14. ADH acts on the following parts of kidney

- a) DCT
- b) Thin ALLH
- c) DLLOH
- d) DCT
- e) Collecting duct

F F T T (ADH acts on later DCT and cortical collecting duct)

15. The proximal convoluted tubules

- a) Reabsorb most of the sodium ions in glomerular filtrate
- b) Reabsorb most of the chloride ions in glomerular filtrate
- c) Reabsorb most of the potassium ions in glomerular filtrate
- d) Contain juxtaglomerular cells which secrete rennin
- e) Contain the main target cells for antidiuretic hormone

TTTFF (Rodde/Q-410/P-175)

Each question below contains five suggested answers- choose the one best response to each question (16-30)

16. Which of the following renal functions will be assessed if you are measuring the urine specific gravity?

- a) Blood flow
- b) Concentration
- c) Filtration
- d) Reabsorption
- e) Secretion

B (SBAs Pathology/Q-9.5/P-130)

17. Which one of the followings has the lowest clearance value?

- a) Urea
- b) Inulin
- c) Creatinine
- d) PAH
- e) Glucose

E [Ref: Ganong 25th/P-677]

18. Which one of the apical transporter is present in the collecting duct

- a) Na/glucose CT
- b) Na/Lactate CT
- c) K^+ channels
- d) Na^+ channels
- e) Na/H exchange

D [Ref: Ganong 25th/P-680]

19. Erythropoietin is secreted by

- a) Cells in the macula dense
- b) Cells in the proximal tubules
- c) Cells in the distal tubule
- d) Granular cells in the juxtaglomerular apparatus
- e) Cells in the peritubular capillary bed

E [Ref: Ganong 25th/P-707]

20. In the presence of vasopressin, the greatest fraction of filtered water is absorbed in the

- a) Proximal tubule
- b) Loop of Henle
- c) Distal tubule
- d) Cortical collecting duct
- e) Medullary collecting duct

A [Ref: Ganong 25th/P-693]

21. Which of the following does not decrease GFR?

- a) Endothelins
- b) Vasopressin
- c) TXA_2
- d) Histamine
- e) PGE_2

E (ref Ganong 25th p-678)

22. Ethacrynic acid acts by inhibiting-

- a) Na-Cl cotransporter
- b) Na-K-2Cl co transporter
- c) Na-K counter transport
- d) Na-H counter transport
- e) Na channel

B (ref Ganong 25th,p-690)

23. Where Amino acid is reabsorbed?

- a) PCT
- b) DCT
- c) LOH
- d) Cortical collecting duct
- e) Cortical collecting tubule

A (ref Ganong 25th690)

24. Aldosterone exert its greatest effect-

- a) Bowman's capsule
- b) PCT
- c) DCT
- d) LOH
- e) Cortical collecting duct

E (Ref Ganong 25th page-692)

25. Which one of the following causes decreased Vasopressin secretion?

- a) Pain
- b) Decreased ECF volume
- c) Standing
- d) Stress
- e) Alcohol

E (regganong 25th p-696)

26. Renin secretion is increased by

- a) Vasopressin
- b) Angiotensin |
- c) Increased afferent arteriolar pressure
- d) Increased Na/Cl reabsorption
- e) Increased circulatory catecholamines

E (Ref Ganong 25th /P-703)

27. After vomiting which of the followings will not be increased?

- a) Vasopressin
- b) Aldosterone
- c) Norepinephrine
- d) Angiotensin-II
- e) ANP

E (RegGanong 25th /P-706)

28. Which of the following cell type acts as a Chemoreceptor?

- a) Juxtaglomerular cells
- b) Mesangial cells
- c) Bowman's capsule
- d) Macula Densa
- e) Peritubular capillary

D (Ref: Ganong25th ,P-702)

29. Transmembrane potassium Efflux occurs by

- a) Acidosis
- b) Insulin
- c) Aldosterone
- d) Alkalosis
- e) Acute potassium excess

A

30. The commonest cause of SIADH is-

- a) Idiopathic
- b) Tumours
- c) Anticonvulsant
- d) TB
- e) Psychosis

B (Ref: Davidson 23rd ,P-357)