

GENESIS

Post-Graduation Medical Orientation Centre

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FCPS PART-I

Review Exam

Batch : FRIDAY MEGA BATCH 1

**Topic : Histology, RESPIRATORY & General Phsiology, Endocrine Phsiology,
Renal System, Body Fluid, Nervous system**

Exam Date	: 17/01/20
Total Number	: 100
Exam Time	: 8.00 am - 8.40 am
Pass Mark	: 70

Question 1-50 based on single answers

Endocrine physiology

1. Correct information regarding thyroid hormone is -

- a) 7% of secreted hormone is thyroxine
- b) There is no difference between T3 & T4 regarding intensity of action
- c) Tissue use mainly T3
- d) Thyroxine is stored inside follicular cells
- e) T3 is transported to blood with carrier protein

E (Guyton 12th-909)

2. Which statement is correct regarding effects of vasopressin?

- a) Increase permeability of PCT to Na^+
- b) Increase permeability of PCT to water
- c) Raising the osmolality of body fluid
- d) Retention of water in excess of solutes
- e) Increase the effective osmotic pressure of the body

D (Ref: Ganong-25th-301)

3. Which of the following condition is most likely to induce glucagon secretion?

- a) High serum concentration of glucose
- b) Low serum concentration of amino acids
- c) Low serum concentration of glucose
- d) Secretion of somatostatin by the pancreatic D-cells
- e) Parasympathetic stimulation

C

4. A 26-year-old woman has Graves' disease. In this woman, one would likely expect -

- a) Goiter
- b) Increased metabolic rate
- c) Increased sweating
- d) Increased thyroid-stimulating hormone (TSH) secretion
- e) Weight loss

D

5. Calcitonin decreases serum calcium level directly by-

- a) \uparrow Bone formation
- b) \uparrow Urinary excretion of Ca^{2+}
- c) \downarrow Bone resorption
- d) \downarrow Intestinal absorption of Ca^{2+}
- e) \downarrow Formation of D_3

C (Ganong-25th -383)

6. Which statement is correct regarding diabetic ketosis? There is a decreased metabolic breakdown of -

- a) Ketones
- b) Glycogen
- c) Glucose
- d) Fat
- e) Amino acids

C (RODDE-496)

7. Testosterone is the male sex hormone.

Testosterone is synthesized in the testes from-

- a) Cholesterol
- b) Taurine
- c) Tyrosine
- d) Glycine
- e) Estrogen

A

Histology

8. Which component is not correct regarding histological feature of small intestine?

- a) Plica circularis
- b) Crypts of Lieberkühn
- c) Paneth cell
- d) Peyer's patches
- e) Tenia coli

E

9. Which layer of the epidermis is present only in thick skin?

- a) Stratum basale
- b) Stratum spinosum
- c) Stratum lucidum
- d) Stratum corneum
- e) Stratum granulosum

D

10. Mononuclear phagocytic system includes all except-

- a) Osteoclast
- b) Tissue histiocytes
- c) Langerhans cell
- d) Macrophage
- e) Lymphocytes

E

11. Which characteristic is unique to cardiac muscle?

- a) Striated
- b) Often branched
- c) Intercalated disc
- d) Lack of T-tubule
- e) Centrally located nuclei

C

12. Histologically most of the brain tumors are-

- a) Meningioma
- b) Neuroma
- c) Ependymoma
- d) Schwannoma
- e) Astrocytoma

E [Junq-168]

13. Taste buds are much more abundant on which papillae?

- a) Filiform
- b) Fusiform
- c) Vallate
- d) Foliate
- e) None of above

C [Junq-299]

14. Types of collagen not correctly matched

- a) Type-I: Tendon
- b) Type-II: Cartilage
- c) Type-III: Basal laminae
- d) Type-X: Placenta
- e) Type-IX: Cartilage

D [Junq-104]

Nervous system

15. Which statement is correct regarding termination of sub-arachnoid space?

- a) Lower border of L1
- b) Upper border of L2
- c) 3rd sacral vertebra
- d) 2nd sacral vertebra
- e) 3rd lumbar vertebra

D

16. Surest sign of brain stem death

- a) Absent corneal reflex
- b) Absent vestibulo-ocular reflex
- c) Absent gag reflex
- d) Apnea test
- e) Fixed pupil

D

17. 3rd cranial nerve palsy causes

- a) Convergent squint
- b) Divergent squint
- c) Anhydrosis
- d) Epiphora
- e) Loss of ciliospinal reflex

B

18. Output from cerebellum is solely from?

- a) Basket cells
- b) Purkinje cells
- c) Granular cells
- d) Climbing fibers
- e) Pyramidal cells

B

19. Slow wave sleep is mediated by

- a) Adrenaline
- b) Non-adrenaline
- c) GABA
- d) Serotonin
- e) Glutamate

D

20. Which of the following statements is not correct regarding thalamus

- a) It is a part of diencephalon
- b) Posterior end expanded to form pulvinar
- c) Related to 3rd ventricle
- d) Inferior surface continuous with the tegmentum of the midbrain
- e) It relays only sensory signals to the cerebral cortex

E

21. Damage to the extra pyramidal system results in

- a) Gross paralysis of limbs
- b) Intention Tremor
- c) Failure of co-ordination
- d) Rigidity
- e) Loss of deep muscle reflexes

D

GP

22. The major lipoprotein source of the cholesterol used is

- a) Chylomicron
- b) IDL
- c) Albumin bound fatty acid
- d) LDL
- e) HDL

D

23. The Golgi complex

- a) Is an organelle that participates in the breakdown of proteins and lipids.
- b) Is an organelle that participates in post-translational processing of proteins.
- c) Is an organelle that participates in energy production.
- d) Is an organelle that participates in transcription and translation.
- e) Is a subcellular compartment that stores proteins for trafficking to the nucleus.

B

24. Second messengers-

- a) Are substances that interact with first messenger outside cells.
- b) Are substances that bind to first messengers in the cell membrane.
- c) Are hormones secreted by cells in response to stimulation by another hormone.
- d) Mediate the intracellular responses to many different hormones and neurotransmitters.
- e) Are not formed in the brain.

D

25. The cross-bridges of the sarcomere in skeletal muscle are made up of-

- a) Actin
- b) Myosin
- c) Troponin
- d) Tropomyosin
- e) Myelin

B

26. Gap junction

- a) Are absent in cardiac muscle
- b) Are present but of little functional importance in cardiac muscle
- c) Are absent in smooth muscle
- d) Connect the sarcotubular system to individual skeletal muscle cell.
- e) Are present and provide the pathway for rapid spread of excitation from one cardiac muscle fiber to another

E

Renal system

27. In an experiment the primary site of salt and water reabsorption in the kidney was selectively destroyed. Which of the following is the primary site of salt and water reabsorption in the kidney?

- a) Collecting duct
- b) Glomerulus
- c) Juxtaglomerular apparatus
- d) Proximal tubule
- e) Thick ascending limb of the loop Henle

D

28. Which of the following substances is actively secreted into the renal tubules?

- a) Amino acids
- b) Chloride
- c) Glucose
- d) Potassium
- e) Sodium

D

29. A 40-year-old diabetic woman has glycosuria. This may occur due to inadequate glucose reabsorption at -

- a) Collecting duct
- b) Distal convoluted tubule
- c) Glomerulus
- d) Loop of Henle
- e) Proximal convoluted tubule

E

30. Percentage (%) of water reabsorption in different parts of renal tubule-

- a) PCT: 15%
- b) DCT: 60-70%
- c) CD: 20-25%
- d) AL of loop of Henle: 0%
- e) DL of loop of Henle: 5%

D

31. In a normal kidney, a large increase in glomerular filtration rate (GFR) would be expected to occur following:

- a) An increase in mean arterial pressure from 90 mmHg to 140 mmHg
- b) Vasoconstriction of glomerular afferent arterioles
- c) Vasoconstriction of vasa recta
- d) Strong, acute sympathetic stimulation to kidney
- e) Substantial increase in renal blood flow

E

32. Causes of atonic bladder are followings except

- a) Crush injury in sacral region
- b) Tabetic bladder
- c) Damage of sensory nerve fiber from bladder
- d) Constrictive fibrosis around sacral dorsal root nerve fiber
- e) Damage of spinal cord above sacral region

E

33. A 16-yr old girl with gross facial and ankle edema was diagnosed with nephrotic syndrome. In this patient edema is most probably due to-

- a) Arterial occlusion
- b) Decreased oncotic pressure
- c) Increased capillary hydrostatic pressure
- d) Lymphatic obstruction
- e) Venous obstruction

B

34. Dehydration increases plasma concentration of all of the following except-

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

E

Exp: Dehydration produces hypotension & hypovolemia, so body will try to combat it by secreting hormone which produces hypertension fluid retention. So ANP only answer

35. A person is most likely to feel thirsty in the presence of-

- a) Decreased level of angiotensin II
- b) Hypoglycemia
- c) Increased ECF volume
- d) Increased ICF volume
- e) Increased level of angiotensin II

E

Respiratory SYSTEM

36. Muscle of forceful inspiration-

- a) Rectus abdominis
- b) The diaphragm
- c) External intercostal muscle
- d) Lattisimus dorsi
- e) Internal intercostal muscle

D

37. In an experiment testing a new muscle relaxant it was noticed that this drug only affected the muscles of inspiration. Which of the followings are muscles of inspiration?

- a) Abdominal muscles and external intercostals
- b) Diaphragm and abdominal muscles
- c) Diaphragm and external intercostals
- d) Diaphragm and internal intercostals
- e) Internal and external intercostals

C (Guyton)

38. Lung compliance is mostly determined by-

- a) Negative intrapleural pressure
- b) Residual volume of air in the lungs
- c) Negative intra alveolar pressure
- d) The elastic forces of the lung tissue itself
- e) Elastic forces caused by surface tension of the fluid lining the inside wall of the alveoli

E (Guyton)

39. Followings are increased by exercise except-

- a) Pulmonary blood flow
- b) Rate and depth of respiration
- c) O₂ consumption
- d) Arterial PO₂
- e) CO₂ formation

D

40. Which one is more important to confirm the diagnosis in obstructive lung disease?

- a) FVC
- b) FEV₁
- c) Tidal volume
- d) Inspiratory capacity
- e) PEF

B

41. Which category of hypoxia results from tissue exposure to metabolic inhibitors such as cyanide?

- a) Stagnant hypoxia
- b) Anemic hypoxia
- c) Hypoxic hypoxia
- d) Histotoxic hypoxia
- e) None of the above

D

42. Respiratory center is directly stimulated by

- a) PCO₂
- b) PO₂
- c) H⁺ ion
- d) Na⁺ ion
- e) K⁺ ion

C (Ganong)

43. Following substance synthesized and used by lung-

- a) Prostaglandin
- b) Histamine
- c) Surfactant
- d) Serotonin
- e) Kallikrein

C

44. A 35-year-old woman with fever, weight loss and progressively increasing shortness of breath of 6 weeks' duration had a chest X-ray which showed prominent hilar lymphadenopathy and diffuse pulmonary interstitial disease. She had a video-assisted thoracoscopic lung biopsy. Microscopic examination of the lung biopsy showed non-caseating granulomas. She is most likely to have-

- a) Asbestosis
- b) Interstitial pneumonitis
- c) Sarcoidosis
- d) Silicosis
- e) Tuberculosis

C

45. Lung cancer is not associated with-

- a) Beryllium
- b) Radon
- c) Asbestos
- d) N₂O
- e) Cadmium

D

Body fluid

46. In a patient who has become dehydrated body water should be replaced by intravenous-

- a) Distilled water
- b) 0.9 % NaCl solution
- c) 5% glucose solution
- d) Hypereutectic aluminum
- e) 10% glucose solution

C

47. Dehydration increases the plasma concentration of all of the following hormone except-

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

C

48. Regarding extracellular edema which statement is correct?

- a) Abnormal leakage of fluid from the plasma to the interstitial spaces across the capillaries
- b) Active return of fluid from the interstitial space to the blood
- c) Leakage of fluid from the interstitial space to the plasma
- d) Increased plasma colloidal osmotic pressure
- e) Decreased capillary hydrostatic pressure

A

49. Because ICF volume can only change if and only ECF osmolarity changes (because all substances enter and leave the body through the ECF compartment).

An addition of 10L of isotonic NaCl will cause what change in ICF volume?

- a) 5L increase
- b) No change
- c) 5L decrease
- d) 10L increase
- e) 2.5L increase

B

50. Which substance represents most of the non-permanent particles in the ECF?

- a) NaCl
- b) MgCl_2
- c) CaCl_2
- d) NaHCO_3
- e) H^+

A