

ZO0502 FINAL TERM CURRENT PAPERS (MIDTERM CURRENT MCQS INCLUDED)

1. Non diffusible ___ produce Donnan effect SOLUTE
2. ___ channels are involved in producing action potential. Na+ and K+
3. Which statements not related to voltage gated Na channel. ___ options likh k laye
4. AChE abundantly present in SNYPTIC CLEFT
5. Which ___ monitors the position of muscles and joints. PROPRIOCEPTORS
6. Sensory sensilla are organ of ___ in insects. TASTE
7. Merkel Disks are associated with the reception of VIBRATION
8. Human ear can detect sound 20 TO 20000 HRTZ
9. interstitial tissues constitute ___ of adult testes mass 20%
10. Adenohypophysis is the site for production of ___ options likh k laye
11. Velocity of impulse conducting by arterial fiber is 0.3 m/s
12. Equation indicate blood flow $V = Q/A$
13. Relative viscosity of plasma 1.8
14. Fenestrated capillaries are found in endocrine glands
15. Which is local vasoconstrictor Angiotensin II
16. ___ is formed in lungs, acts as local vasoconstrictor Angiotensin II
17. Amount of air M/V that still remains in lungs when they fully collapse 30 to 120mL
18. Respiratory system of ___ is composed of 7 or 9 air sacs Birds
19. Central chemoreceptors are located in Medulla of mammals and Air breathing vertebrates
20. which are stenohaline animals Marine spider, crab
21. A camel can lose ___ of water and still survive 40%
22. ___ is involve in maintaining pH of urine TUBULAR SECRATION
23. GFR averages an astounding ___ per minute 125 mL
24. It requires only ___ of water to excrete 1g of urea. 0.05 L
26. Esophagus is included in ___ division of mammalian digestive tract. Four (4)
27. Human GIT secrets ___ exocrine fluid daily. Bile and Bile salts

28. Goblet cells synthesis and secretes Mucus
29. ___ is largest water soluble essential nutrient Vitamin B12
30. Brown fat contains large amount of Mitochondria
31. Which is Neuroethological behavior Study behavior in laboratory
33. Agonistic behavior involve ___ b/w animals Competition
34. Social behaviors are based on Competition
35. Respiratory epithelium has only a thickness of 0.5 to 15 um
36. High pressure is Systolic BP
37. Atrial natriuretic peptide (ANP) hormone secreted by Stretch-Sensitive Secretory Cells
38. Blood with hemoglobin carry ___ Oxygen per 100ml. 20 ml
39. Inspiratory volume is 1900 ml
40. DCT secrete _____ NH₄⁺ ions, K⁺ ions, & H⁺ ions.
41. Teloest fish is _____ Ammonotelic Animals
42. Esophagus is part of Foregut
43. Deudenum is _____ cm long 25cm
44. Troponin is sensitive to Ca⁺
45. Electric impulse is observed in Cardiac muscle
46. Proteases are (trypsin , chymotrpsin , pepsin)
47. Facilitated diffusion occurs with channel proteins
48. Sweating occur in UCT (Upper Critical Temperature)
49. Thickness of muscle fibers is _____
50. 1 joule of energy utilized in work, 3Joule energy is degraded
51. Study behavior in laboratory Neuroethological
52. A honey bee finds a food source close to the 50meter
53. One female has an exclusive relationship with two or more males' poly androus
54. Social behavior (Cooperation , competition, conflict)
55. Agonistic behavior (threat display, attach and fight)

MIDTERM PAST CURRENT MCQS OF ZOO502

1. A slowly occurring evolutionary process Adaptation
2. Changes are induced experimentally in the laboratory Acclimation
3. Neurotransmitters induce large increase in permeability to ions by acting on integral membrane proteins in nerve and muscle cell
4. Diffusion through the membrane down the conc. gradient with the help of transport proteins facilitated diffusion
5. Donnan equilibrium is characterized by a reciprocal distribution of the anions and cations
6. The conc. of K⁺ is maintained 10-30 times more in the cytosol than extracellular fluid
7. carrier protein Na⁺/K⁺ ATPase
8. A depolarization in the range of -55 to -30 mV is the threshold that triggers an AP.
9. The permeability of Na⁺ channel for K⁺ ions 0.09
10. Giant axons of arthropods and molluscs: 30 m/sec
11. Which of the following is not a pharmacological application Anemia
12. Calcium ions are not delayed rectifiers
13. Example of mechanical stimuli is gravity
14. Which one is not G protein receptor for taste sour and salty
15. Merkel's Disks are associated with the reception of vibration
16. Meissner's Corpuscles receptors are for touch
17. Each hair cell has 20-300 nonmotile stereocilia.
18. Human ear can detect sound frequencies lying between 20 to 20000 hertz.
19. Hair cells have a Vrest of -60 mV
20. Cold Receptors are 3.5 times more common in skin than heat receptors
21. Rods are more sensitive to light
22. Sensory layer of eye with photoreceptor cells Rods and cons is Retina
23. Visible spectrum for human eyes lies between the wavelengths of 400-740 nm
24. A person with loss of red cones is called a protanope
25. Effect on neighboring cells paracrine secretion
26. Adenohypophysis has pituitary lobe anterior
27. ACTH is a peptide hormone comprising single chain of 39 amino acids
28. Hypothyroidism causes Cretinism and Goiter
29. Regulate Ca²⁺ and phosphate ions in blood Parathormone PTH
30. Adrenal cortex produces two major types of steroid hormones: Mineralocorticoids • Glucocorticoids

31. Catecholamines Conversion of tyrosine to dopa and dopamine occurs in the cytosol
32. Delta Cells constitute 10% of islets
33. interstitial cell constitutes of 20% mass
34. placental estrogens are 30 times more than the normal levels.
35. Thyroglobulin is stored within the thyroid gland in large follicles
36. Diameter of membrane channel is less than 1.0nm
37. channel involve producing action potential Na+ and K+
38. Action potential is inflow of Na+ depolarization
39. Hallucination Endorphins
40. The receptor molecules are typically proteins
41. sensory sensilla are organ of taste
42. Prolactin regulates fat metabolism and reproduction in Birds
43. Example of peptide hormone in reproduction hormones Oxytocin
44. Rod photoreceptors are sensitive to low intensity dimmer light
45. Concentration of K+ is 10-20 times higher inside the cell than outside
46. The correct statement is Symporters are coupled transporters that transfer two solutes in the same direction
47. Most neurons have an RMP of -70mV, when no impulse is being conducted
48. Radioactively labeled TTX is used to estimate density of Na+ channels
49. Voltage-Gated Na+ Channels are Fast Acting channels
50. In many invertebrate species, APs can last for 10-100 milliseconds
51. Delayed Rectifiers are Voltage gated K+ channels
52. Cytosolic conc. of Ca²⁺ remains below 10⁻⁶ M
53. Major ions responsible for V_{rest} are K+, Na+ & Cl-
54. Which of the following is not correct about ion channel protein Have Hydrophilic passageway that facilitate quick flow of water molecules and ion in dissolved form.
55. Thickness of cell membrane is 5nm
56. Which is not associated with ATPase Ca Activated
57. Which is not Fast inhibitory transmitters Acetylcholine
58. AChE is abundantly present in the synaptic cleft
59. Mescaline that induces hallucinations
60. The genes for red and green-cone pigments are closely linked on the X chromosome
61. Example of steroid hormone is Aldosterone
62. substance that is released via a duct through the gland to the external or internal epithelial surfaces Exocrine secretion

63. Inhibits release of Growth Hormone (GH) Somatostatin
64. Amine hormone (Thyroid & Adrenal Modulatory hormone) are synthesized by the action of Enzyme on amino acid Tyrosine
65. Acts as enteric neurotransmitter Substance P
66. In many organisms, ACTH also plays role in circadian rhythms
67. Pituitary Gland release ___ hormones 9
68. Which is not part of a cell body Myelin Sheath
69. Adenohypophysis It contains five types of glandular cells that synthesize and secrete six hormones
70. A color-blind person who lacks green cones is called a deuteranope
71. Example of Apocrine secretions Mammary gland
72. Salivary glands produce saliva that is delivered to the oral cavity through submandibular and parotid ducts
73. Oxytocin stimulates motility of the oviduct in Birds
74. Which of the following hormone is released from anterior lobe of pituitary gland luteinizing hormone LH
75. Parathormone over secretion leads to Softness of bones
76. Type of secretion in which entire cell ruptures and breakup to release its content Holocrine secretion
77. Human retina contains 6 million cones
78. Which one is not related to diffusion option low to high concentration
79. melatonin belong to pineal Gland
80. pineal gland found dorsal surface of.....in vertebrate forebrain
81. target cell of hormones usually havereceptors 2000 to 100,000
82. Thick filament are composed of myosin.
83. Each molecule of calsequestrin protein can bind around.....calcium 50
84. human s-A node is ...thick 1 millimeter thick
85. Velocity of impulse conduction through most atria fiber is..... 0.3 m/s.
86. Average cardiac output for resting adult man- 5L/mint
87. Myocytes are ___ muscles Cardiac
88. The knob of dendrite has ___ olfactory cilia 4 to 25
89. Synaptic cleft is ___ nm wide 20
90. Pituitary gland is ___ dm 1cm
91. Rhythmical discharge of S-A node is: ___/mint 70 to 80
92. An adaptive change within an individual animal. Happens due to chronic exposure to new, naturally occurring environmental conditions Acclimatization.
93. Antidiuretic hormone can increase water permeability of renal collecting duct in mammals up to 10 times
94. ___ are delayed rectifiers Voltage – gated K⁺ channels

95. Which one of the following is not the feature of the Voltage-gated Ca^+ channel _____ They are known as delayed rectifier
96. Which of the following statement is correct about action potential _____ inflow of sodium ion (depolarization)
97. Which of the following monitor the position of muscles and joints _____ Proprioceptors
98. Taste receptors in terrestrial vertebrates are not located in/on _____ Larynx
99. Which is not the part of organ of Corti _____ Reissner's men
100. Near the end of pregnancy, placental estrogens are 30 times more than the normal levels. _____ 30 times
101. Myofibers are _____ in diameter, and up to many centimeters in length _____ 5 to 100 μm
102. Troponin has high affinity for _____ Ca^{2+}
103. When the force exerted by the muscle contraction is equal to the opposing external force than _____ contraction _____ isometric
104. Atrial contraction provides only _____ volume of total mammalian ventricular output _____ 30%

SUBJECTIVE

1. What is blubber and its role /2

Blubber is a thick layer of fat, also called adipose tissue, directly under the skin of all marine mammals **Role:** - A good insulator b/c of low thermal conductivity and prevent heat loss through body surface

2. Define peristalsis /2

Waves of contraction and relaxation in the smooth muscles of walls of alimentary canal • Start from oral cavity and end at distal end of rectum

3. Fahraeu- lindqvist effect?

Fahraeus-Lindqvist Effect: Phenomenon of plasma skimming & resultant increased blood flow velocity is called Fahraeus-Lindqvist effect. It reduces energy required to drive blood through microcirculation

4. Types of vascular resistance /2

Vascular Resistance "The resistance that must be overcome to push blood through the circulatory system and create flow" **Types** • Systemic vascular resistance (SVR) • Pulmonary vascular resistance (PVR)

5. Objectives of ethology /3

Objectives of Ethology: Involves understanding of

- Stimuli that elicit behavior
- Physiological mechanisms mediating response
- Animal's experiences that influence behavior

- Role of behavior in survival & reproduction
- Evolutionary history of behavior

6. Four accessory glands of elementary canal?

Accessory Glands: Secrete digestive juices through ducts. Include: 3 pairs of salivary glands. • Gastric glands, Pancreas, Liver, & Gallbladder

7. Briefly describe ornithine urea cycle /3

Ornithine-Urea Cycle

- Used by all vertebrates except teleost fishes
- Synthesize urea primarily in the liver
- Two ammonia and one CO₂ molecule are added to ornithine to form arginine
- Enzyme arginase cleaves arginine to remove a molecule of urea and regenerate ornithine

8. Factors affects systemic vascular resistance /3

Factors affecting SVR

- Elasticity of vessel wall
- Diameter of vessel
- Decreasing vessel diameter (vasoconstriction) increases SVR
- Increasing vessel diameter (vasodilation) decreases SVR

9. 3 uses of crop in various animals.(3)

Crop plays various roles in different animals. For example

- Food storage without digestion
- Fermenting the food
- Prepare food for nestlings (pigeon's milk)

10. Note on physiological adaptation of ectothermic in hot environment /5

Physiological Adaptations

- Ectotherms have high heat conductance
- Radiate heat rapidly—by moving to less warmer places
- Panting: Above 40°C many reptiles start panting—like birds and mammals
- Increases heat loss through respiratory evaporation, causing cooling.
- Regulating heart rate and flow of blood to surface tissues—to eliminate heat (e.g. marine iguanas)
- Gila monster (*Heloderma suspectum*) evaporates water from its cloaca to cool—a process similar to sweating in mammals

11. Write a note on types of stomach in vertebrates /5

Types of Stomach in Vertebrates: Based on number of chambers, stomachs are classified as:

- Monogastric stomachs

- Digastric stomachs

Monogastric Stomachs

- Consist of a single strong muscular tube or sac
- e.g. stomachs of carnivorous and omnivorous vertebrates

Digastric Stomachs

- Multichambered
- Found in ruminant mammals of order Artiodactyla
- Examples: deer, giraffe, sheep, cattle, camel, llama

Digastric Stomachs

- These stomachs have four chambers, with two divisions:
- First division consists of fermentation chambers rumen and reticulum
- Second division comprises true stomach (omasum and abomasum)

12. What is hypoxia? Responses of aquatic animals in it /5

Hypoxia • “A condition in which the body or a region of the body is deprived of adequate oxygen supply” Hypoxia in

Responses of Aquatic Animals to Hypoxia

- Many aquatic animals utilize anaerobic metabolic pathways to survive hypoxic periods
- Many animals adjust respiratory & cardio-vascular systems to maintain O₂ absorption from hypoxic H₂O
- Many fishes increase gill ventilation rate in hypoxic conditions
- Ram ventilators (e.g. tuna) widely open mouth to increase water flow over the gills

13. What are pheromones? Also describe its Role /10

Pheromones

- Chemical messengers released by many animals in environment to communicate. Spread through air

Roles of Pheromones

1. Recognize Members of Species

- Unicellular organisms recognize members of their own species. Many insects identify members of their colony

2. Reproductive Roles

- Pheromones attract members of opposite sex for breeding
- Induce courtship behaviors in members of a species
- Induce spawning behavior in aquatic animals with external fertilization

3. Territorial Behaviors

- Many male mammals mark their territories with pheromones.
- It warns other males of their occupied area

4. Insect's Social Order

- In a honeybee colony, pheromones produced by queen maintain hive's complex social order.

5. Alarm Calls

- Members of some species produce pheromones on getting injured
- It warns other members of presence of danger in area

6. Repel Predators: Pheromones may repel predators

- Example: foul-smelling musk that makes skunks unpalatable to their enemies.

Join VU BIO ANIMALS