

Classical Thinking

15.1 Excretion and Excretory Products

- Identify the INCORRECT match.
 - Fluids – Urine
 - Bilirubin – Faeces
 - Urochrome – Urine
 - Volatile substances in spices – Sweat
- Body of an organism cannot store excess
 - carbohydrates
 - fats
 - amino acids
 - all of these
- Excess amino acids in the body are broken down by the process of
 - ammonification
 - deamination
 - nitrification
 - denitrification
- The tadpole of frog is
 - uricotelic
 - ammonotelic
 - ureotelic
 - guanine
- Adult frog is
 - ammonotelic
 - ureotelic
 - uricotelic
 - guanotelic
- Fresh water invertebrate or amphibian larvae are
 - ammonotelic
 - ureotelic
 - uricotelic
 - guanotelic
- Ammonia is
 - very toxic
 - less toxic
 - least Toxic
 - none of these
- The elimination of nitrogenous wastes in the form of ammonia is called
 - ammonotelism
 - ureotelism
 - uricotelism
 - guanotelism
- Organisms which excrete ammonia as main excretory product are
 - ammonotelic
 - ureotelic
 - uricotelic
 - guanotelic
- Ammonia is
 - insoluble in water
 - partly soluble in water
 - soluble in water
 - none of these
- Ammonia is very toxic, hence
 - requires immediate removal.
 - can be retained in the body for sometime.
 - can remain in the body for a longer time.
 - none of these
- Animals that are ammonotelic are usually
 - aquatic
 - terrestrial
 - arboreal
 - aerial
- Urea is
 - very toxic
 - less toxic
 - least toxic
 - none of these
- Which of the following is produced during Ornithine cycle?
 - Urine
 - Urea
 - Ammonia
 - Creatinine
- In ureotelic organisms, how many ATP molecules are required to produce one molecule of urea?
 - 1
 - 2
 - 3
 - 4
- The chief nitrogenous waste product in the urine of terrestrial mammals is
 - ammonia
 - urea
 - uric acid
 - guanine
- The normal constituent of urine of a healthy person is
 - albumin
 - acetone
 - urea
 - bile pigment
- Ureotelism occurs in _____ animals.
 - aquatic
 - land
 - aerial
 - both (A) & (B)
- The elimination of nitrogenous wastes in the form of uric acid is called
 - ammonotelism
 - ureotelism
 - uricotelism
 - guanotelism
- Sharks retain more urea in their body fluid to make their blood _____ to surrounding marine water.
 - isotonic
 - hypotonic
 - hypertonic
 - none of these
- Inosinic acid pathway is responsible for synthesis of
 - uric acid from ammonia.
 - ammonia from uric acid.
 - synthesis of urea from ammonia.
 - synthesis of ammonia from urea.
- Uric acid is
 - very toxic
 - less toxic
 - least toxic
 - none of these
- Uric acid is
 - least soluble in water
 - readily soluble in water
 - less soluble in water
 - none of these
- Uricotelism causes _____ of body's water.
 - considerable loss
 - less loss
 - least loss
 - no loss
- Which one of the following contains uric acid as the chief nitrogenous waste?
 - Frog
 - Pigeon
 - Land snails
 - Both (B) and (C)

26. The uricotelic animals are normally found in
 - (A) aquatic habitat
 - (B) dry habitat
 - (C) aerial habitat
 - (D) terrestrial habitat
27. Excessive formation of uric acid may result in
 - (A) gout
 - (B) rheumatoid arthritis
 - (C) osteoarthritis
 - (D) osteoporosis
28. The elimination of guanine in solid form is called
 - (A) ammonotelism
 - (B) ureotelism
 - (C) uricotelism
 - (D) guanotelism
29. Guanotelism is seen in
 - (A) spiders and scorpions
 - (B) birds and reptiles
 - (C) fishes and amphibians
 - (D) all of these
30. Level of plasma creatinine above normal indicates poor
 - (A) renal function
 - (B) liver function
 - (C) thyroid function
 - (D) pituitary function
31. Regulation of water and salt balance in the body fluid is called
 - (A) excretion
 - (B) osmoregulation
 - (C) respiration
 - (D) circulation
32. Which of the following organisms possesses salt excreting glands?
 - (A) Sea turtles
 - (B) Marine Iguanas
 - (C) Albatross
 - (D) All of these
33. Marine organisms are mostly
 - (A) osmoregulators
 - (B) osmoconformers
 - (C) eurythermal
 - (D) euryhaline
34. True organs of excretion are found in animals that exhibit
 - (A) asymmetry
 - (B) radial symmetry
 - (C) bilateral symmetry
 - (D) all of these
35. Which one of the following organisms excrete waste through nephridia?
 - (A) Cockroach
 - (B) Earthworm
 - (C) Crab
 - (D) Liver fluke
36. Protonephridia is the excretory organ of
 - (A) platyhelminthes
 - (B) coelenterates
 - (C) arthropods
 - (D) aschelminthes

37. Identify the INCORRECT statement.
 - (A) Metanephridia are unbranched coiled tubes that connect the body cavity to nephrostomes.
 - (B) Body fluid enters the nephridium through nephridiopore.
 - (C) In insects, excretion takes place by Malpighian tubules.
 - (D) Crustaceans have green glands as excretory organs.

15.2 Human Excretory System in Human Being

38. Position of the kidneys in the body is
 - (A) inside the peritoneum.
 - (B) in the thoracic cavity.
 - (C) just above the diaphragm.
 - (D) attached to the dorsal wall of the abdominal cavity.
39. In man, kidneys are present on either side of the vertebral column at the level of
 - (A) 10th thoracic to 3rd lumbar vertebrae
 - (B) 12th thoracic to 5th lumbar vertebrae
 - (C) 12th thoracic to 3rd lumbar vertebrae
 - (D) 10th thoracic to 5th lumbar vertebrae
40. Which membrane separates the kidneys from the abdominal cavity?
 - (A) Pericardium
 - (B) Periosteum
 - (C) Peritoneum
 - (D) Pleura
41. Kidneys of man have
 - (A) both side concave.
 - (B) outer side convex and inner side concave.
 - (C) outer side concave and inner side convex.
 - (D) both side convex.
42. The point of the kidney which is a point of entry and exit for the renal artery, renal vein, lymph vessels, nerves and ureters is
 - (A) hilus
 - (B) renal pelvis
 - (C) pyramid
 - (D) renal sinus
43. _____ is funnel-shaped area in the region of medulla of kidney.
 - (A) Ureter
 - (B) Calyx
 - (C) Renal pelvis (renal sinus)
 - (D) Column of Bertini
44. The opening of pyramidal pocket in pelvis is called
 - (A) hilus
 - (B) cortex
 - (C) calyx
 - (D) duct of Bellini
45. Which one is not the function of kidney?
 - (A) Acid-base balance
 - (B) Osmoregulation
 - (C) Urea synthesis
 - (D) Salt balance

46. The blood vessel responsible for carrying blood to the kidney
(A) renal vein
(B) renal artery
(C) capillary
(D) pulmonary artery
47. _____ carries blood away from uriniferous tubule through capillary network.
(A) Renal artery
(B) Pulmonary artery
(C) Renal vein
(D) Pulmonary vein
48. The kidneys are covered by fibrous connective tissue called
(A) Glisson's Capsule
(B) tunica albugenia
(C) renal capsule/renal fascia
(D) serous layer
49. Histologically, each kidney is
(A) divided into calyx and pelvis.
(B) divided into outer cortex and inner medulla.
(C) divided into outer medulla and inner cortex.
(D) divided into two lobes of isthmus.
50. Renal medulla is
(A) below the cortex
(B) light red coloured
(C) striated
(D) all of these
51. The medulla of the kidney contains
(A) adipose capsule (B) glomeruli
(C) renal pyramids (D) renal pelvis
52. The narrow apex of pyramid is known as
(A) pelvis
(B) column of Bertini
(C) calyx
(D) renal papillae
53. The ureter extends into the kidney as
(A) renal sinus (B) renal pelvis
(C) calyces (D) both (A) and (B)
54. Minor and major calyx in the kidney open in
(A) ureter
(B) collecting tubule
(C) pelvis
(D) convoluted duct
55. The length of ureter is about _____ cm.
(A) 25 - 30 (B) 50 - 70
(C) 30 - 40 (D) 10 - 20
56. The interior of urinary bladder is lined by
(A) columnar epithelium
(B) squamous epithelium
(C) transitional epithelium
(D) podocytes
57. Detrusor muscle is present in
(A) cortex (B) urinary bladder
(C) ureters (D) renal sinus
58. Urine is temporarily stored in
(A) kidneys (B) urinary bladder
(C) ureters (D) urethra
59. Urethral opening at its base is controlled by
(A) smooth muscles
(B) connective tissue
(C) sphincter muscles
(D) sphincter valves
60. Releasing of urine becomes voluntary when it is in
(A) pelvis (B) urethra
(C) ureter (D) urinary bladder
61. Micturition refers to
(A) excess glucose in urine
(B) urination
(C) formation of dilute urine
(D) concentration of urine
62. The urethra is
(A) longer in females
(B) shorter in females
(C) longer in males
(D) both (B) and (C)
63. Functional unit of kidney are called
(A) axons (B) dendrons
(C) nephrons (D) neurons
64. The number of nephrons present in each human kidney is about
(A) 2 million (B) 3 million
(C) 1 million (D) 4 million
65. Total length of each nephron is about _____ in mammals.
(A) 10 cm (B) 4 to 6 cm
(C) 1.5 cm (D) 80 to 100 cm
66. The Malpighian corpuscle lies in the _____ region of the kidney.
(A) medulla (B) major calyx
(C) cortex (D) pelvis
67. The outer wall of the Bowman's capsule is made up of
(A) many layers of columnar epithelial cells.
(B) single layer of simple squamous epithelial cells.
(C) many layers of flat cuboidal epithelium.
(D) single layer of cuboidal epithelium.
68. A tuft of capillaries present in a nephron is
(A) Malpighian body
(B) Glomerulus
(C) Bowman's capsule
(D) None of these

69. Each nephron begins with
(A) Bowman's capsule
(B) Glomerulus
(C) Malpighian corpuscle
(D) None of these
70. Glomerulus is enclosed in
(A) peritoneum
(B) infundibulum
(C) Bowman's capsule
(D) Malpighian capsule
71. The glomerulus is formed by
(A) capillary network from renal vein.
(B) capillary network from renal artery.
(C) efferent vessel.
(D) capillary network of pulmonary artery.
72. Malpighian corpuscle consists of
(A) afferent and efferent arteriole
(B) glomerulus and renal artery
(C) glomerulus and podocyte
(D) glomerulus and Bowman's capsule
73. The feet processes of podocytes rest upon
(A) visceral layer of Bowman's capsule.
(B) parietal layer of Bowman's capsule.
(C) basement membrane of glomerular capillaries.
(D) the internal walls of the proximal convoluted tubule.
74. Podocytes are cells which form
(A) neck of nephron.
(B) wall of glomerular capillaries.
(C) wall of Bowman's capsule.
(D) wall of Henle's loop.
75. Filtration slits are present in the walls of
(A) glomerular capillaries
(B) inner layer of Bowman's capsule.
(C) kidney
(D) vasa recta
76. Tubular part of the nephron is differentiated into
(A) proximal convoluted tubule
(B) loop of Henle
(C) distal convoluted tubule
(D) all of these
77. A 'U'-shaped region of renal tubule is called
(A) PCT (B) DCT
(C) Loop of Henle (D) none of these
78. Henle's loop is present in
(A) medulla (B) cortex
(C) pelvis (D) minor calyx
79. DCT is present in
(A) cortex (B) medulla
(C) urethra (D) pelvis
80. The collecting tubules of a nephron open into
(A) pelvis
(B) renal pyramids
(C) renal column of Bertini
(D) collecting duct
81. The proximal convoluted tubule has a brush border which is due to
(A) microvilli (B) minute hairs
(C) endothelium (D) folded tubes
82. Which of the two structures of nephron are present in the cortex of kidney?
(A) Collecting duct and glomerulus.
(B) Henle's loops and convoluted tubules.
(C) Malpighian body and convoluted tubules.
(D) Henle's loop and duct of Bellini.
83. Which enzyme in the JG cells help to raise blood pressure if it drops suddenly?
(A) Gastrin (B) Renin
(C) Pepsin (D) Amylase
84. Juxtaglomerular apparatus responds to
(A) salt fluctuation
(B) amount of water fluctuation
(C) electrolyte fluctuation
(D) blood pressure fluctuation

15.3 Urine Formation

85. Which of the following substances are unable to filter through glomerular capillaries?
(A) Glucose
(B) Blood cells
(C) Proteins
(D) Both (B) and (C)
86. Ultrafiltration occurs due to
(A) osmotic concentration
(B) glomerular hydrostatic pressure
(C) circulating blood
(D) secretion of nitrogenous waste
87. The hydrostatic pressure in glomerular capillaries is about
(A) 55 mm Hg (B) 15 mm Hg
(C) 10 mm Hg (D) 30 mm Hg
88. The osmotic pressure of blood due to the presence of plasma proteins is
(A) 15 mm Hg (B) 30 mm Hg
(C) 55 mm Hg (D) 10 mm Hg
89. Filtration pressure in the kidney of man is
(A) 45 mm Hg (B) 55 mm Hg
(C) 70 mm Hg (D) 10 mm Hg
90. What is the glomerular filtration rate (GFR) in an average man?
(A) 75 ml/min (B) 100 ml/min
(C) 125 ml/min (D) 200 ml/min