



DIRECTORATE OF SCHOOL EDUCATION TAMILNADU

12NPCB13 (2023-24)	NEET PRACTICE QUESTIONS (TEST-13)	Class : XII Time : 1.15 hrs Total Marks : 240
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Answer key

12th - ZOOLOGY

46. B) (ii) (i) (iv) (iii)

47. C) Propionibacterium shermanii

(Solution: Propionibacterium sp., plays a key role in the formation of the holes. During the cheese-making process, these bacteria consume lactic acid and produce carbon dioxide gas and propionic acid as byproducts. The carbon dioxide gas gets trapped in the cheese, creating the characteristic round holes. Additionally, the propionic acid contributes to the flavor and aroma of the cheese)

48. B) Vitamin B12

(Solution: The conversion of milk to curd, also known as yogurt, increases the amount of Vitamin B12. Vitamin B12 is produced by certain bacteria involved in the fermentation process. During the fermentation of milk into curd, these bacteria synthesize Vitamin B12, making it more available in the final product)

49. D) Activated sludge process

(Solution: The process of using bacteria to break down organic matter in sewage is called the "Activated Sludge Process." In this biological treatment method, sewage is mixed with a culture of microorganisms (the activated sludge) in aeration tanks. The microorganisms, which include bacteria and other microorganisms, break down and digest the organic pollutants in the sewage, reducing the overall organic content.)

50. A) Methane, Hydrogen sulphide, Carbon dioxide

(Solution: Biogas primarily consists of methane (63 percent), along with CO₂ and hydrogen)

51. D) Both A and R are false

(Solution: Cyclosporin A, an immunosuppressant used in organ transplantation is produced from the fungus *Trichoderma polysporum*. It is also used for its anti-inflammatory, antifungal and anti-parasitic properties. Cyclosporin A is an immunosuppressive drug that primarily targets T-cells rather than B-cells. While Cyclosporin A primarily affects T-cells, its use as an immunosuppressive agent can have broader effects on the immune system)

52. D. Streptokinase` - Immunosuppressant

(Solution: Streptokinase is an enzyme produced by certain strains of streptococcal bacteria, particularly *Streptococcus pyogenes*. It has the ability to convert plasminogen into plasmin, which plays a crucial role in the breakdown of blood clots.)

53. C. Streptokinase

(Solution: Streptokinase is a thrombolytic agent that can help dissolve blood clots. In the context of a heart attack, the goal of using streptokinase or other thrombolytic agents is to quickly restore blood flow to the affected part of the heart by dissolving the clot causing the blockage in a coronary artery.)

54. A) Increase in aldosterone levels

(Solution: Increase in aldosterone levels cause an increase in sodium reabsorption in DCT. It is secreted by outer layer of adrenal gland when aldosterone is present in the blood and all the Na⁺ ions in the filtrate are reabsorbed.)

55. D) (iv) (i) (ii) (iii)

56. C) Antidiuretic hormone

(Solution: Diabetes insipidus is associated with a deficiency of antidiuretic hormone (ADH), also known as vasopressin. ADH is produced by the hypothalamus and released by the pituitary gland. It plays a crucial role in regulating the balance of water in the body by influencing the reabsorption of water in the kidneys. In diabetes insipidus, there is a lack of ADH or the kidneys do not respond to it, leading to the excretion of large amounts of dilute urine and causing excessive thirst and urination)

57. C) Blood in the urine

(Solution: Hematuria, which refers to the presence of blood in the urine, can be a symptom of a urinary tract infection (UTI). Other common symptoms of UTIs

include frequent urination, a strong and persistent urge to urinate, burning sensation during urination and cloudy or foul-smelling urine)

58. A) Low blood pressure

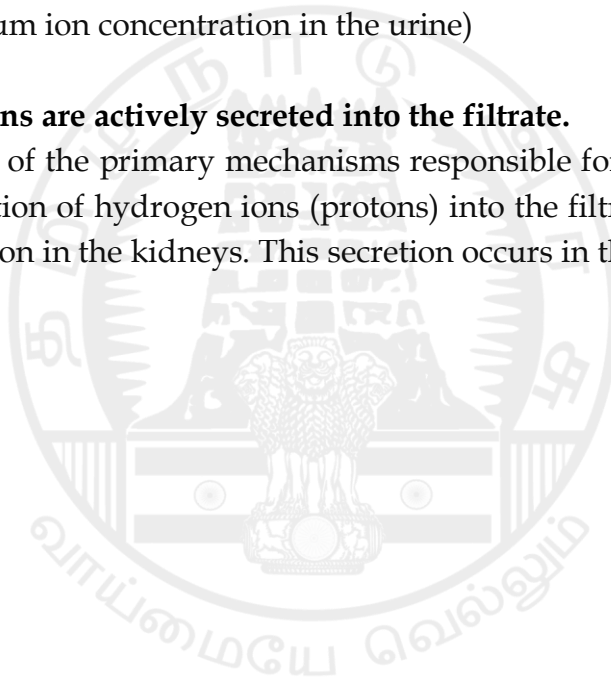
(Solution: The renin-angiotensin-aldosterone system (RAAS) is activated in response to a decrease in blood volume or blood pressure. The system is designed to help maintain blood pressure and electrolyte balance in the body)

59. B) Regulation of glomerular filtration rate (GFR)

(Solution: The macula densa is a specialized structure located in the wall of the distal tubule of the nephron in the kidney. Its primary role is to contribute to the regulation of renal function, specifically in the context of glomerular filtration rate (GFR) and sodium ion concentration in the urine)

60. C) Hydrogen ions are actively secreted into the filtrate.

(Solution: One of the primary mechanisms responsible for the acidity of urine is the active secretion of hydrogen ions (protons) into the filtrate during the process of urine formation in the kidneys. This secretion occurs in the renal tubules.)





DIRECTORATE OF SCHOOL EDUCATION TAMILNADU

11NPCB13 (2023-24)	NEET PRACTICE QUESTIONS (TEST-13)	Class : XI Time : 1.15 hrs Total Marks : 240
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Answer key

11th - ZOOLOGY

46. A) **Increase in aldosterone levels**

(**Solution:** Increase in aldosterone levels cause an increase in sodium reabsorption in DCT. It is secreted by outer layer of adrenal gland when aldosterone is present in the blood and all the Na⁺ ions in the filtrate are reabsorbed.)

47. D) (iv) (i) (ii) (iii)

48. C) **Hydrogen ions are actively secreted into the filtrate.**

(**Solution:** One of the primary mechanisms responsible for the acidity of urine is the active secretion of hydrogen ions (protons) into the filtrate during the process of urine formation in the kidneys. This secretion occurs in the renal tubules.)

49. A) **Bright's disease**

(**Solution:** It is also called glomerulonephritis and is characterized by inflammation of the glomeruli, which are the small filtering units in the kidneys responsible for removing waste and excess fluids from the blood to form urine. This inflammation can impair the kidneys' ability to filter blood properly, leading to various symptoms and potential complications. The main symptoms are hemorrhagia, proteinuria, salt and water retention, oligouria, hypertension, and pulmonary oedema.)

50. B) **Reabsorption of Na⁺ and water from renal tubules due to aldosterone**

(**Solution:** Aldosterone is a hormone that plays a key role in the regulation of sodium (Na⁺) and water balance in the body, particularly in the kidneys. Its primary action is to promote the reabsorption of sodium and water in the renal tubules, which can help in the prevention of diuresis (increased urine production).

51. A) Both A and R are true and R is the correct explanation of A

52. D) Liver cells

(Solution: Angiotensinogen is a protein produced and secreted by the liver. It is an inactive precursor or prohormone that plays a crucial role in the renin-angiotensin-aldosterone system (RAAS), a hormonal system that regulates blood pressure and fluid balance in the body).

53. D) 17 - 30 mg/100mL

(Solution: The filtered waste products leave our body through urine. From the glomerular filtrate, the majority of the urea is excreted in urine but some quantity of urea is reabsorbed. For this reason, it is found in blood. The normal range of urea in 100 ml of human blood is about 17- 30 mg)

54. D) Atrial Natriuretic Peptide or factor (ANF) stimulates adrenal cortex to secrete aldosterone.

(Solution: Angiotensin II stimulates adrenal cortex to secrete aldosterone that causes reabsorption of Na⁺, K⁺ excretion and absorption of water from the distal convoluted tubule and collecting duct)

55. A) Atrial Natriuretic Factor

(Solution: A decrease in blood pressure/volume typically does not stimulate the release of atrial natriuretic peptide (ANP); instead, ANP release is triggered by an increase in blood volume and pressure in the atria of the heart.)

56. B) Distal tubule and Collecting duct

(Solution: The primary site of action for aldosterone in the kidneys is the distal tubule and the collecting ducts. Aldosterone is a hormone produced by the adrenal glands, and it plays a key role in the regulation of electrolyte balance, particularly sodium and potassium, in the body)

57. A) Low blood pressure

(Solution: The renin-angiotensin-aldosterone system (RAAS) is activated in response to a decrease in blood volume or blood pressure. The system is designed to help maintain blood pressure and electrolyte balance in the body)

58. B) Regulation of glomerular filtration rate (GFR)

(Solution: The macula densa is a specialized structure located in the wall of the distal tubule of the nephron in the kidney. Its primary role is to contribute to the regulation of renal function, specifically in the context of glomerular filtration rate (GFR) and sodium ion concentration in the urine)

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