



BIOLOGY

Biology

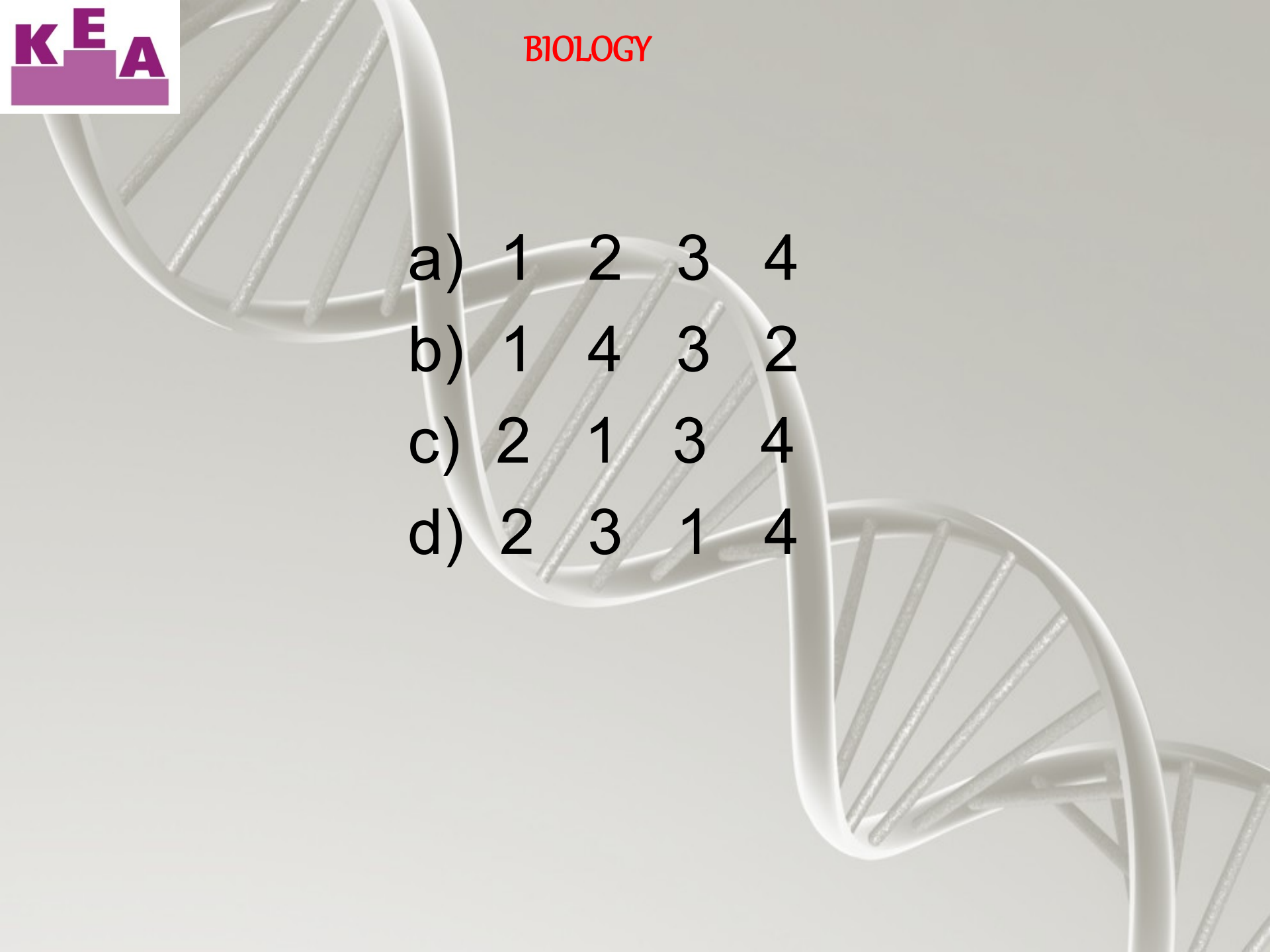
Excretion &

Nervous System

Q-1: The four structures listed are part of the human excretory system

1.Bladder 2.Kidney 3.Ureter 4.Urethra

In which order does a molecule of urea pass through these structures

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- A large, light gray, semi-transparent DNA double helix structure is shown, winding across the page from the top left to the bottom right. It serves as a background for the text.
- a) 1 2 3 4
b) 1 4 3 2
c) 2 1 3 4
d) 2 3 1 4

Q-2: Least toxic excretory material is

- a) Ammonia
- b) Uric acid
- c) Urea
- d) Amino acids

Q-3: The visceral layer of Bowman's capsule consists of modified epithelial cells for filtration called

- a) Squamous epithelium
- b) Microvilli
- c) Podocytes
- d) Melanocytes

Q-4: Arrange the following to trace the path of filtrate through a renal tubule:

- (1) proximal convoluted tubule**
- (2) distal convoluted tubule**
- (3) ascending limb of nephron loop**
- (4) descending limb of nephron loop**

a) 1, 2, 3, 4

b) 1, 4, 3, 2

c) 2, 3, 4, 1

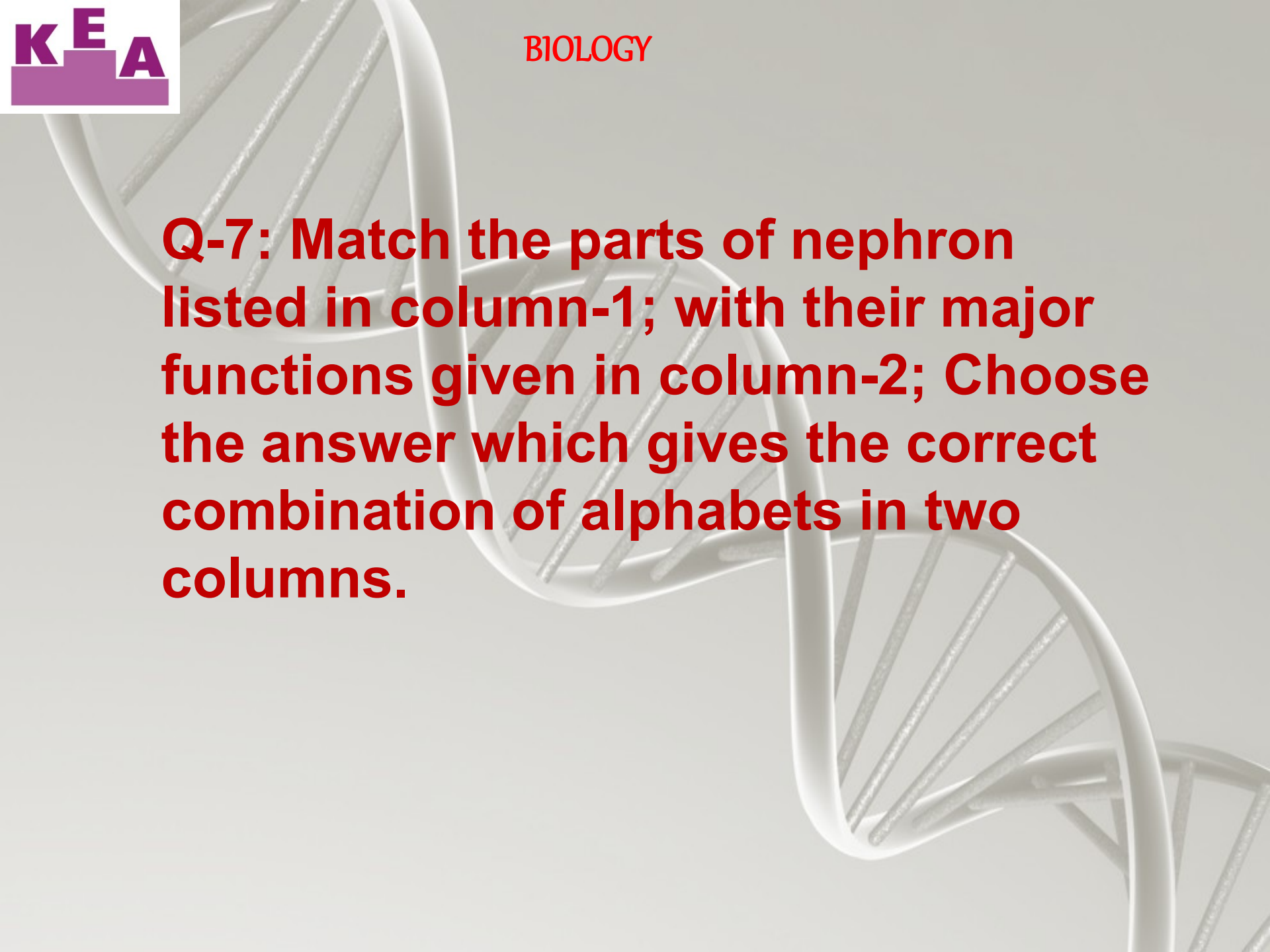
d) 3, 2, 1, 4

Q-5: Which of these is not a function of kidneys?

- a) Maintenance of acid base balance.
- b) Excretion of nitrogenous waste products
- c) Temperature regulation.
- d) Maintenance of water balance.

Q-6: The basic kidney processes that determine the composition of urine are designated as A, B, C 1st, 2nd and 3rd steps respectively. Then the rate of excretion 'E' is equal to

- a) $A - B + C$
- b) $A + B - C$
- c) $A - B - C$
- d) $A + B + C$

A large, light gray, semi-transparent DNA double helix structure is visible in the background, winding across the page from the top left towards the bottom right.

Q-7: Match the parts of nephron listed in column-1; with their major functions given in column-2; Choose the answer which gives the correct combination of alphabets in two columns.

column1

column2

A. Juxtaglomerular cells

B. Renal corpuscle

C. Distal convoluted
tubule

D. Proximal convoluted
tubule

p. Ultrafiltration

q. Augmentation

r. Secretion of
renin

s. Urine formation

t. Tubular
reabsorption

a) $A=s$; $B=p$; $C=q$; $D=t$

b) $A=r$; $B=s$; $C=q$; $D=p$

c) $A=s$; $B=p$; $C=t$; $D=q$

d) $A=r$; $B=p$; $C=q$; $D=t$

Q-8: The kidney is covered by a tough connective tissue capsule called the

- a) Renal capsule
- b) Glisson's capsule
- c) Bowman's capsule
- d) Malpighian corpuscle

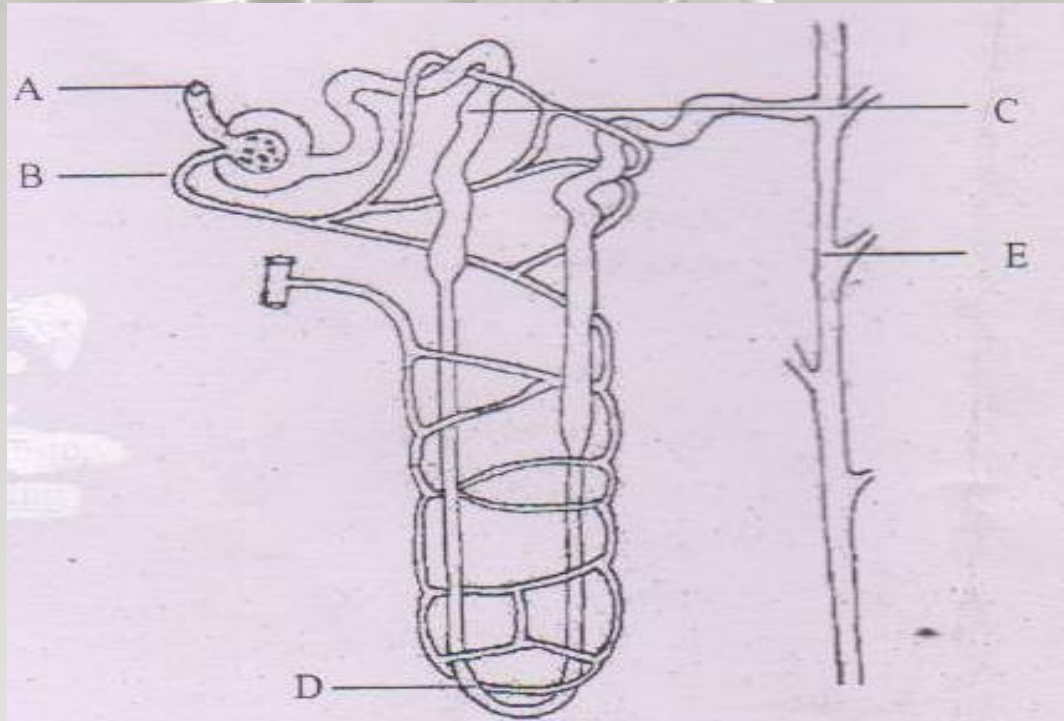
Q-9: Absorption of water in DCT is controlled by

- a) ACTH
- b) ADH
- c) LH
- d) Oxytocin

Q-10: Bowman's capsule is lined by

- a) Ciliated cuboidal epithelium
- b) Squamous epithelium
- c) Non-ciliated cuboidal epithelium
- d) Non-ciliated columnar epithelium

Q-11: Identify the different parts labelled in the uriniferous tubule



- a) A-efferent arteriole, B-afferent arteriole,
C-loop of Henle, D-collecting duct, E-PCT
- b) A-efferent arteriole, B-afferent arteriole,
C-PCT, D-loop of Henle, E-collecting duct
- c) A-afferent arteriole, B-efferent arteriole,
C-PCT, D-loop of Henle, E-collecting duct
- d) A-afferent arteriole, B-efferent arteriole,
C-collecting duct, D-loop of Henle, E-PCT

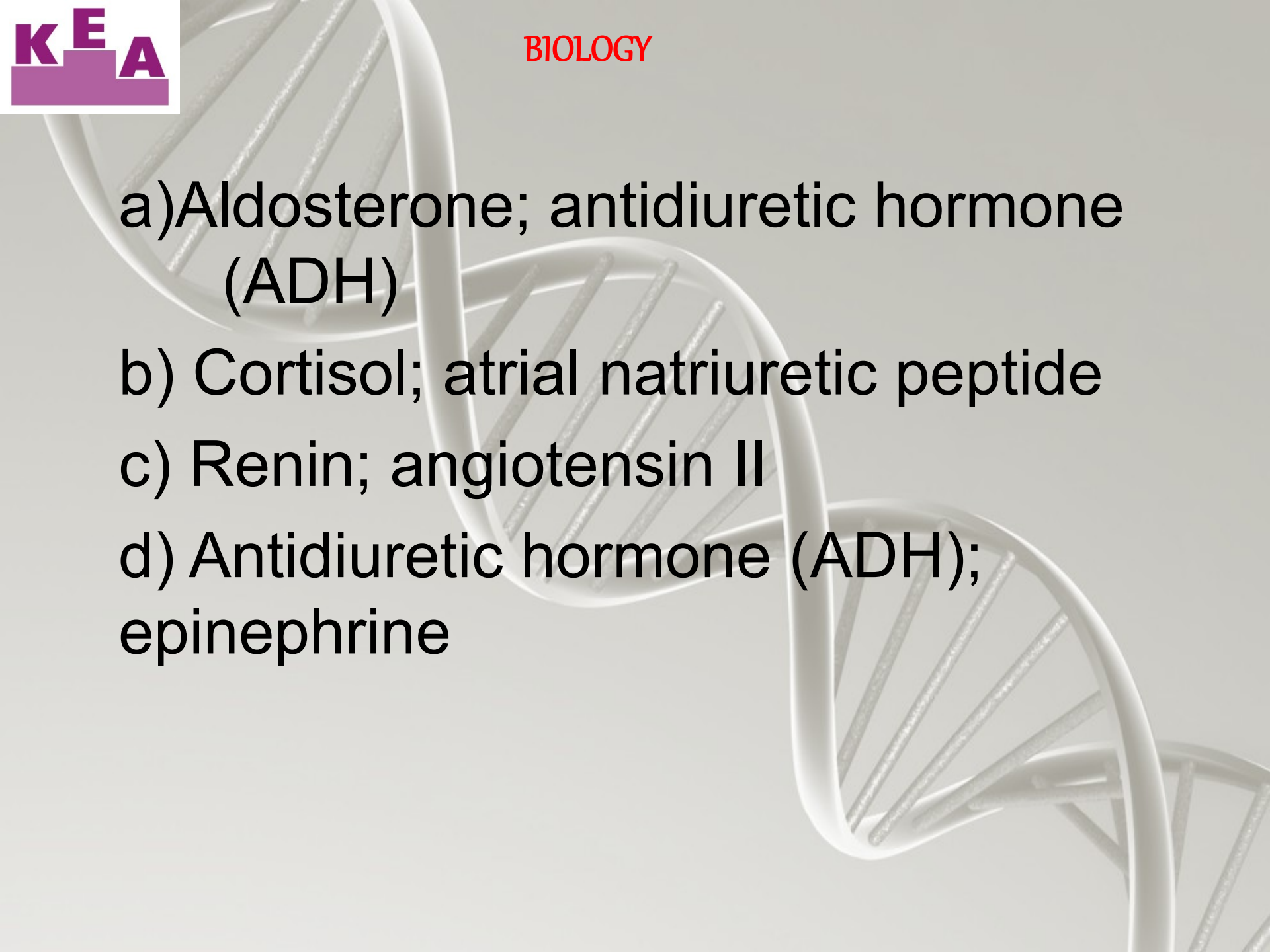
Q-12: Renal calculi are usually comprised of the following except which one?

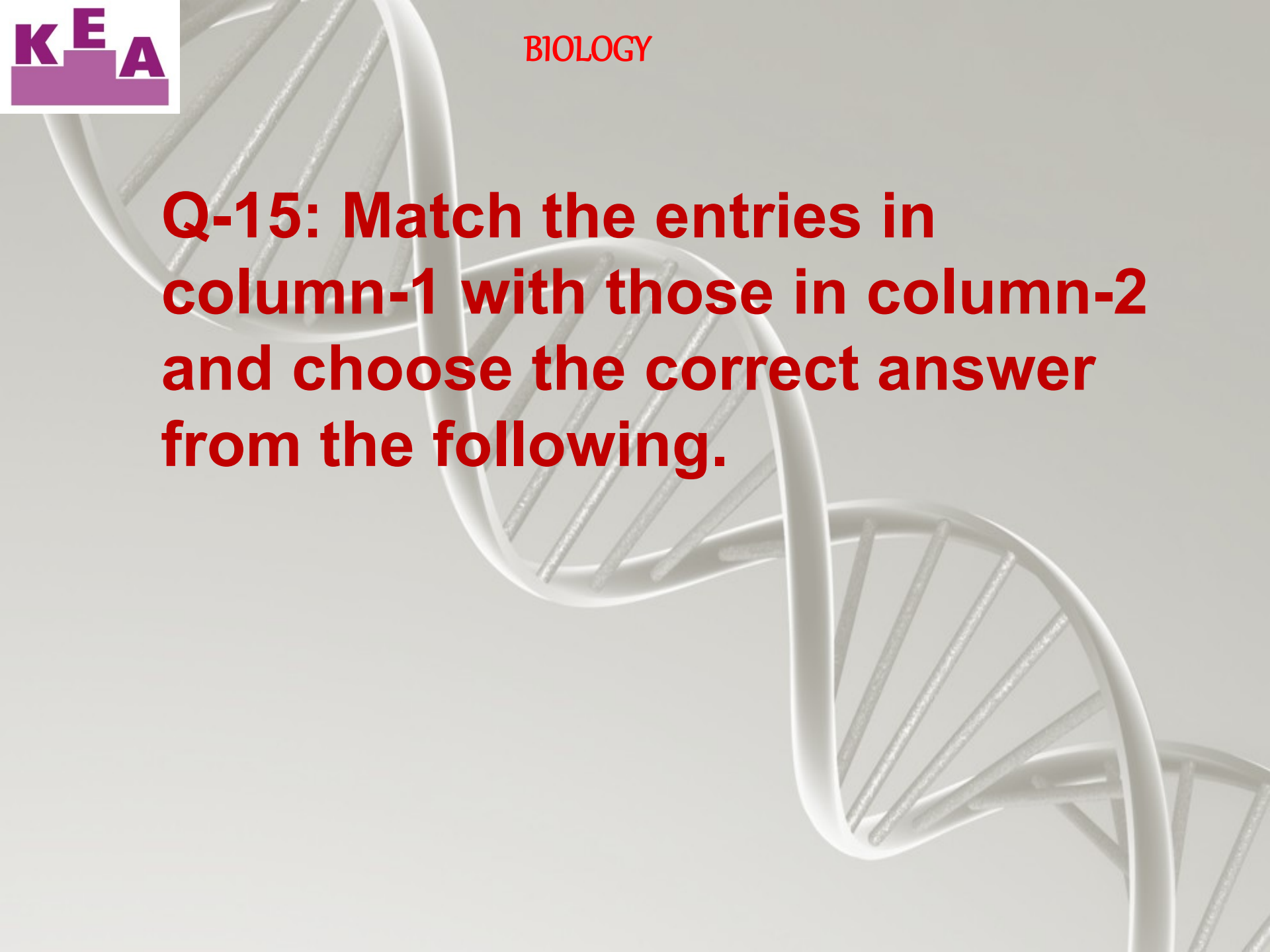
- a) Cholesterol
- b) Calcium oxalate
- c) Uric acid
- d) Magnesium phosphate

Q-13: If in an individual EFP is 20mm Hg, CHP is 30mm Hg and GOP of plasma protein is 20 mm Hg. What will be the GHP.

- a) 50mm Hg
- b) 60mm Hg
- c) 70mm Hg
- d) 30mm Hg

Q-14: Within the renal tubule, two hormones play a role in determining the final volume and sodium conc. of the urine. The hormone _____ regulates sodium reabsorption, while _____ regulates water reabsorption.

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- A large, light gray, semi-transparent DNA double helix structure is positioned diagonally across the background of the slide, starting from the top left and extending towards the bottom right.
- a) Aldosterone; antidiuretic hormone (ADH)
 - b) Cortisol; atrial natriuretic peptide
 - c) Renin; angiotensin II
 - d) Antidiuretic hormone (ADH); epinephrine

A large, light gray, semi-transparent DNA double helix structure is shown in the background, winding across the page from the top-left towards the bottom-right. The helix is composed of two intertwined strands connected by horizontal rungs representing base pairs.

Q-15: Match the entries in column-1 with those in column-2 and choose the correct answer from the following.



BIOLOGY

column 1

A. Uraemia

B. Haematuria

C. Ketonuria

D. Glycosuria

column 2

p. Excess of protein level in urine

q. Presence of high ketone bodies in urine

r. Presence of blood cells in urine

s. Presence of glucose in urine

t. Presence of excess urea in blood

- 
- A large, light gray DNA double helix structure is shown in the background, winding across the page from the top left towards the bottom right. The helix is composed of two strands connected by rungs representing base pairs.
- a) A-t; B-r; C-q; D-s
 - b) A-s; B-t; C-r; D-q
 - c) A-t, B-r, C-s, D-q
 - d) A-r, B-t, C-q, D-p

Q-16: The amount of filtrate formed in all the renal corpuscles of both kidneys each minute is about

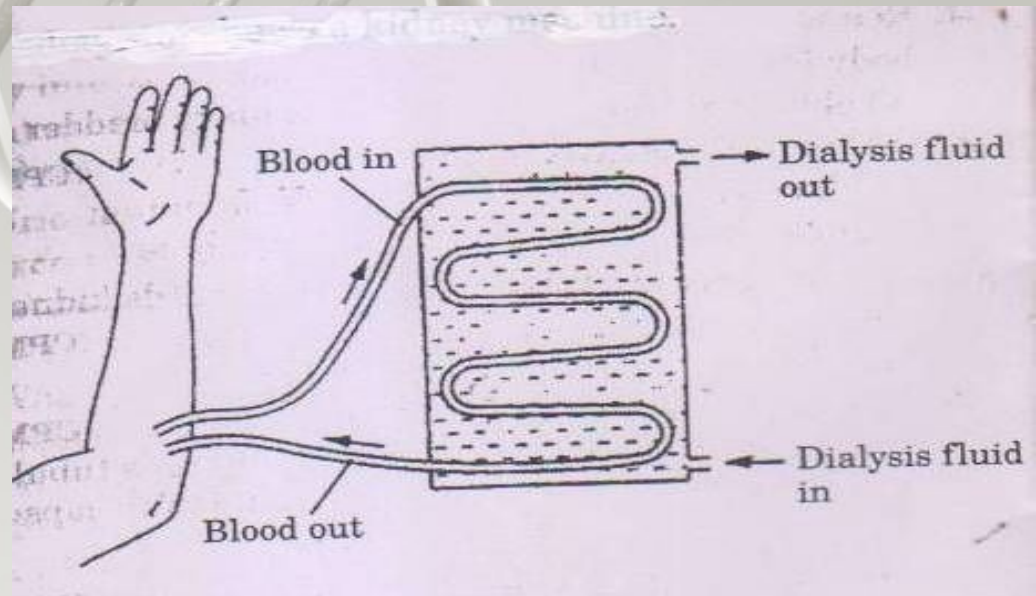
- a) 180 liters
- b) 125 ml
- c) 12 ml
- d) 1250 ml

Q-17: In a recently found Continuous Ambulatory Peritoneal Dialysis(CAPD), the dialysing membrane used is

- a) Cellophane membrane
- b) Egg membrane
- c) Peritoneum membrane
- d) All of the above

Q-18: The diagram shows a kidney machine. What must be at the same concentration in the dialysis fluid and in the blood

- a) Glucose
- b) Salt
- c) Urea
- d) Water



Q-19: The leading cause of kidney failure is:

- a) Polycystic kidney disease
- b) Kidney stones
- c) Hydronephrosis
- d) Diabetes & hypertension

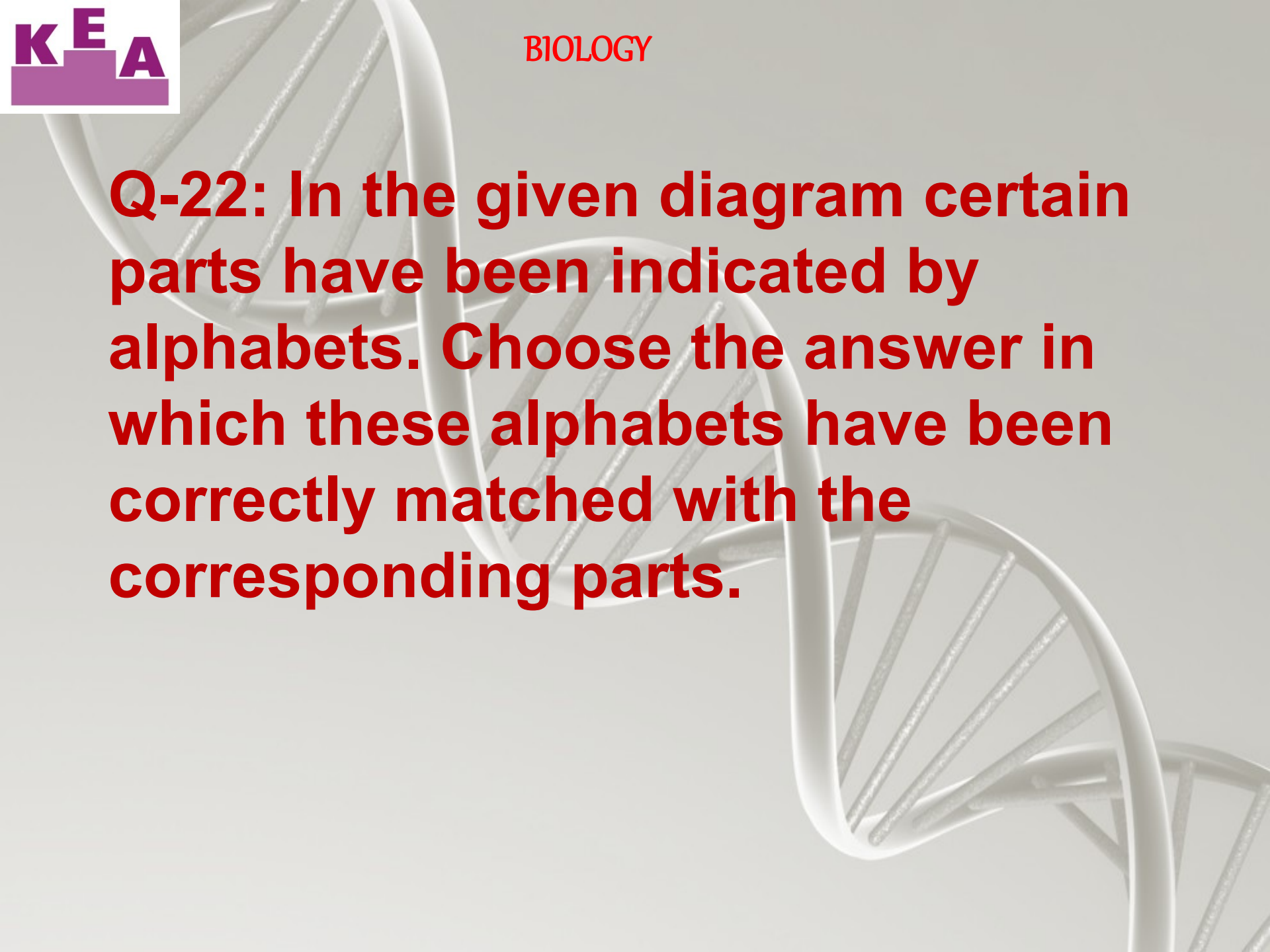
Q-20: Na^+ and Cl^- are absorbed in kidney in the region of

- a) Ascending limb of Henle's loop
- b) Descending limb of Henle's loop
- c) DCT
- d) PCT

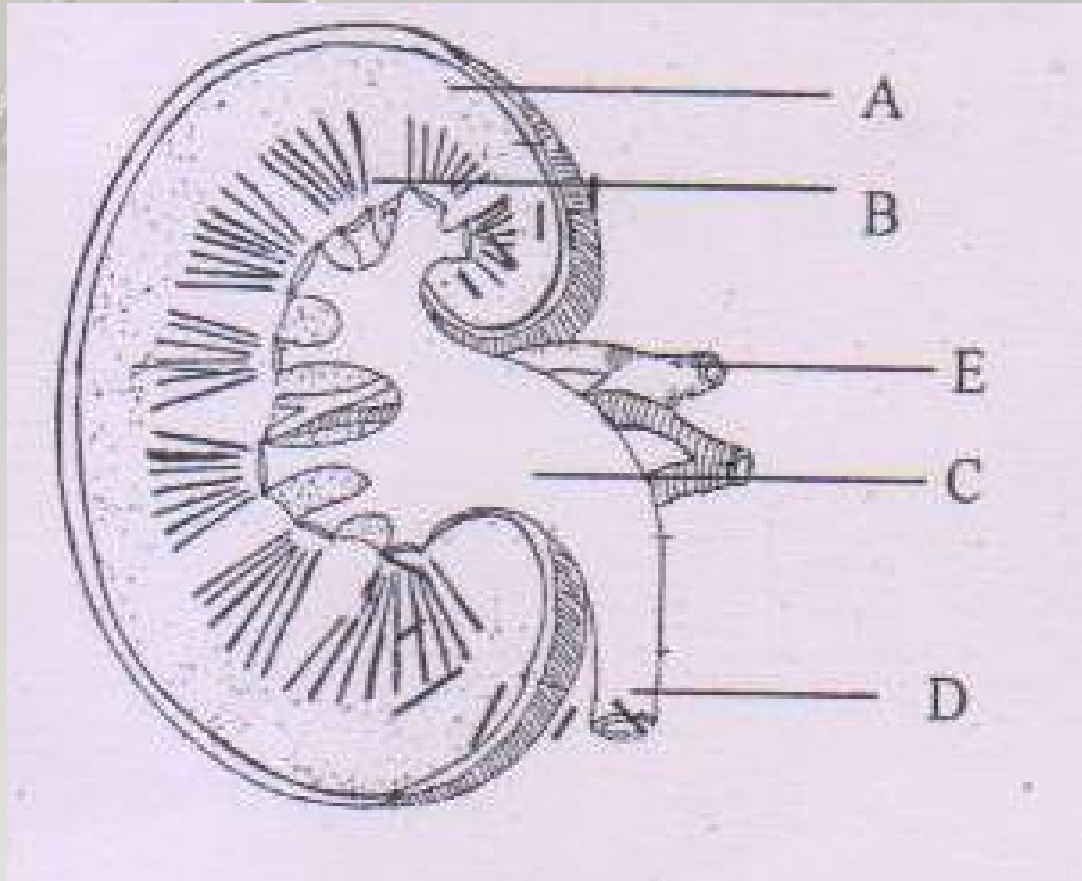
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Q-21: Waste formed from adenine and guanine(purines) is:

- a) Allantoin
- b) Uric acid
- c) Urea
- d) Ammonia

A large, semi-transparent, light gray DNA double helix structure is shown in the background, winding across the page from the top left towards the bottom right. The helix is composed of two intertwined strands connected by horizontal rungs representing base pairs.

Q-22: In the given diagram certain parts have been indicated by alphabets. Choose the answer in which these alphabets have been correctly matched with the corresponding parts.



- a) A=renal cortex, B=renal pelvis, C=renal artery, D=ureter, E=renal pyramid
- b) A=renal cortex, B=renal pyramid, C=renal pelvis, D=ureter E=renal artery
- c) A=renal pyramid B=renal cortex, C=renal artery, D=renal pelvis E=ureter
- d) A=renal pyramid, B=ureter, C=renal, cortex, D=renal pelvis, E=ureter

Q-23: Which blood vessel contains the least amount of urea?

- a) Hepatic vein
- b) Renal artery
- c) Hepatic portal vein
- d) Renal vein

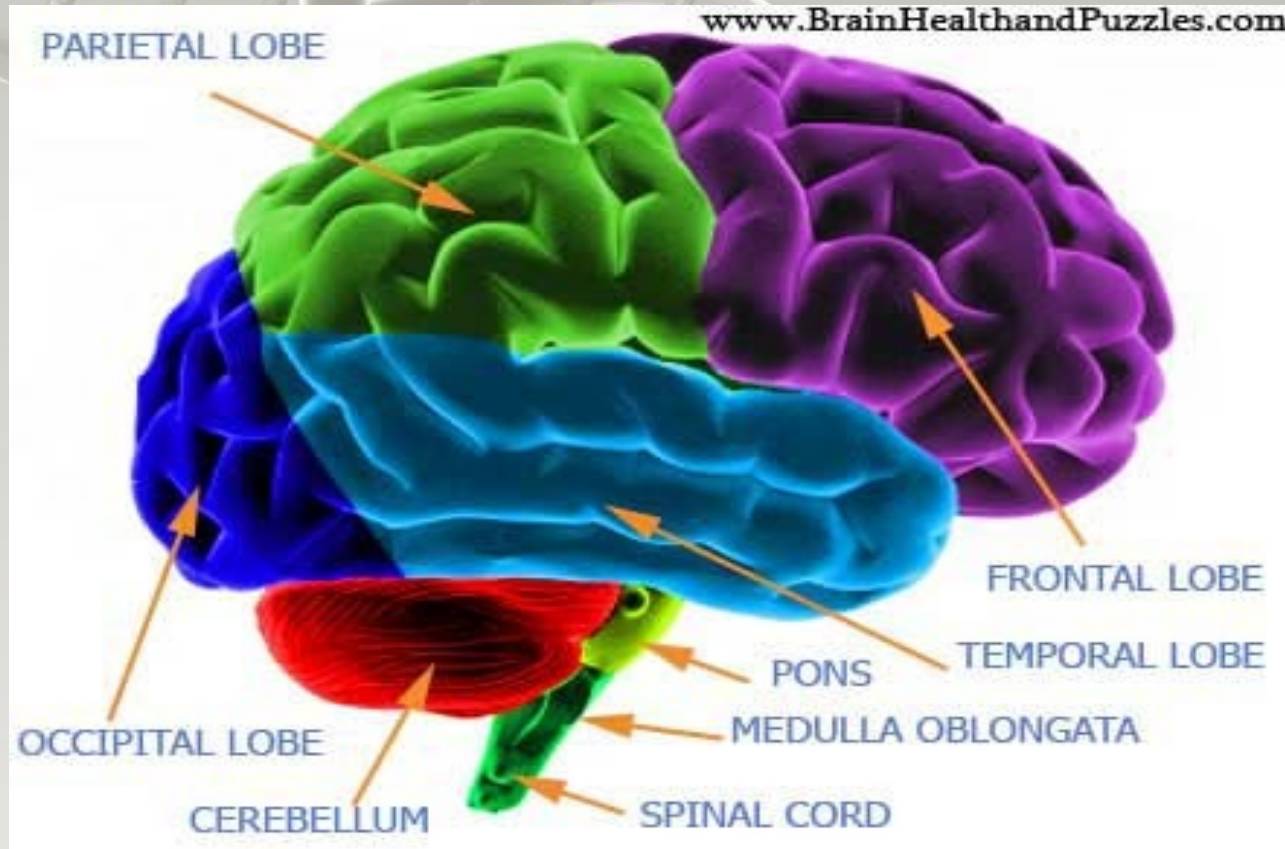
Q-24: Sequence of meninges from inner to outside is

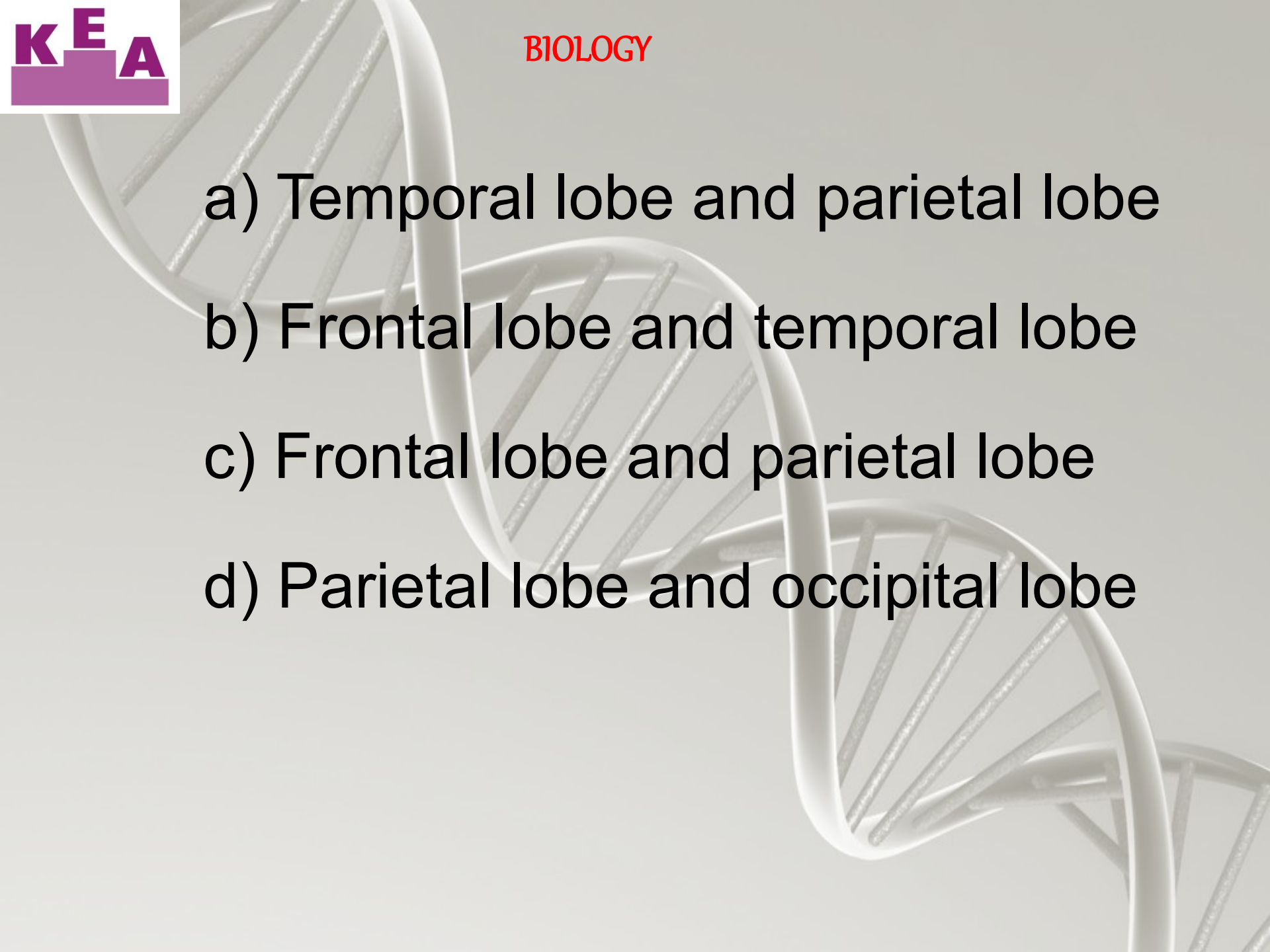
- a) Duramater-arachnoid-piamater
- b) Duramater-piamater-arachnoid
- c) Piamater-arachnoid-duramater
- d) Arachnoid-duramater-piamater

Q-25: Which one of the following statements is incorrect?

- a) Choroid plexus is the network of capillaries
- b) Glial cells are the supporting cells of CNS
- c) Ventricles of brain are filled with blood
- d) Sella turcica is the sac like bony covering of pituitary

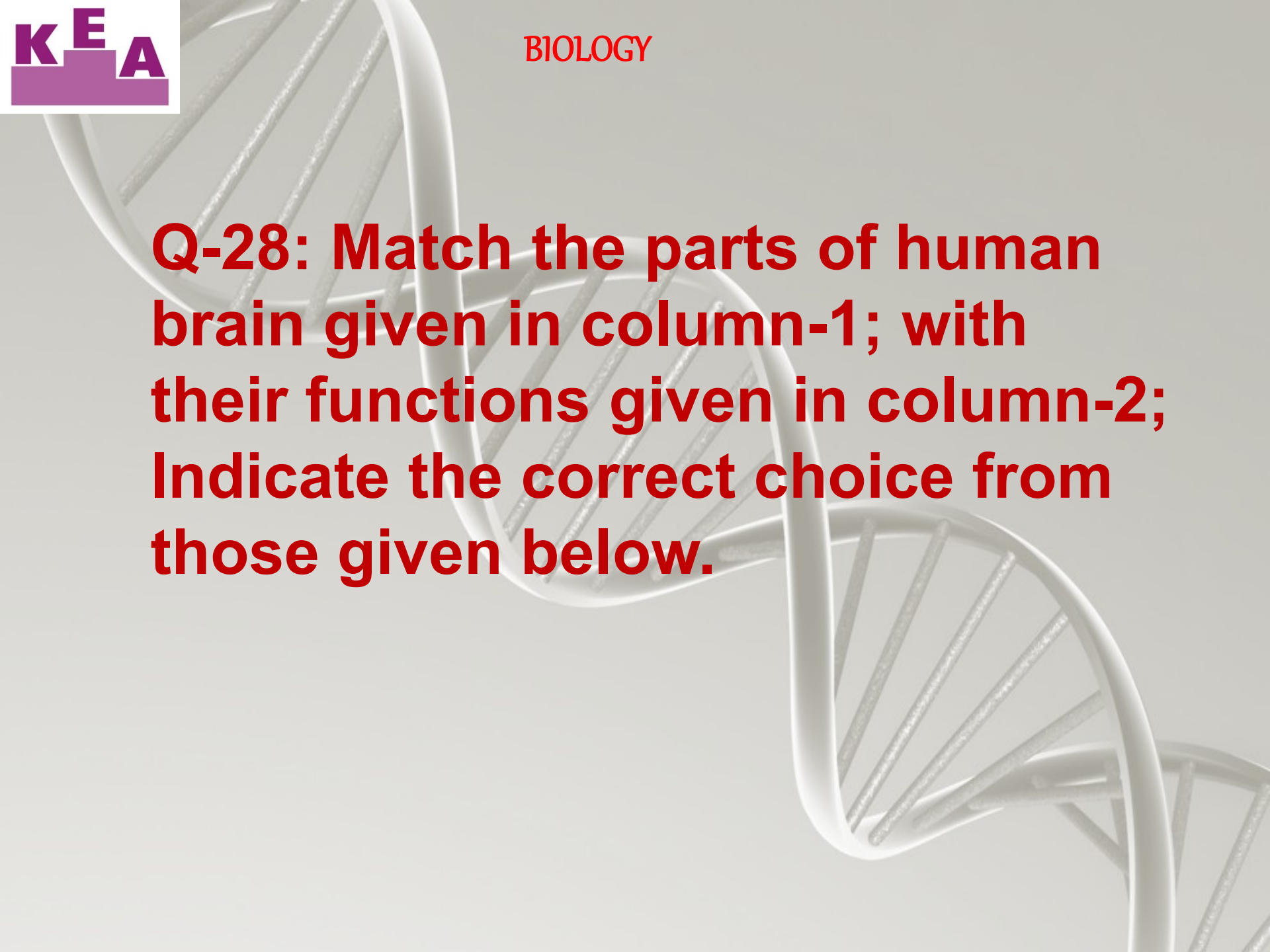
Q-26: The sylvian fissure separates :



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- A large, light gray, semi-transparent DNA double helix structure is visible in the background, winding across the slide from the top left towards the bottom right.
- a) Temporal lobe and parietal lobe
 - b) Frontal lobe and temporal lobe
 - c) Frontal lobe and parietal lobe
 - d) Parietal lobe and occipital lobe

Q-27: Anterior pituitary cells called mammatotropes secrete

- a) Adrenocorticotrophic hormone
- b) Follicle stimulating hormone
- c) Prolactin
- d) Growth hormone

A large, light gray DNA double helix structure is visible in the background, winding across the page from the top left towards the bottom right.

Q-28: Match the parts of human brain given in column-1; with their functions given in column-2; Indicate the correct choice from those given below.

column 1

A. Cerebrum

B. Cerebellum

C. Hypothalamus

D. Midbrain

column 2

p. Controls the pituitary

q. Controls the vision and hearing

r. Controls the rate of heart beat

s. Seat of intelligence

t. Maintains body posture

a) A=s; B=t; C=q; D=p

b) A=t; B=p; C=q; D=r

c) A=s; B=t; C=r; D=p

d) A=s; B=t; C=p; D=q

Q-29: Which hormone is required for ovulation and formation of the corpus luteum?

- a) FSH
- b) LH
- c) TSH
- d) PRL

Q-30: The hormone ADH is produced by cells whose bodies are in the _____, but it is actually released or secreted in the _____.

- a) Hypothalamus; posterior pituitary
- b) Hypothalamus; anterior pituitary
- c) Anterior pituitary; posterior pituitary
- d) Hypophysis; hypothalamus

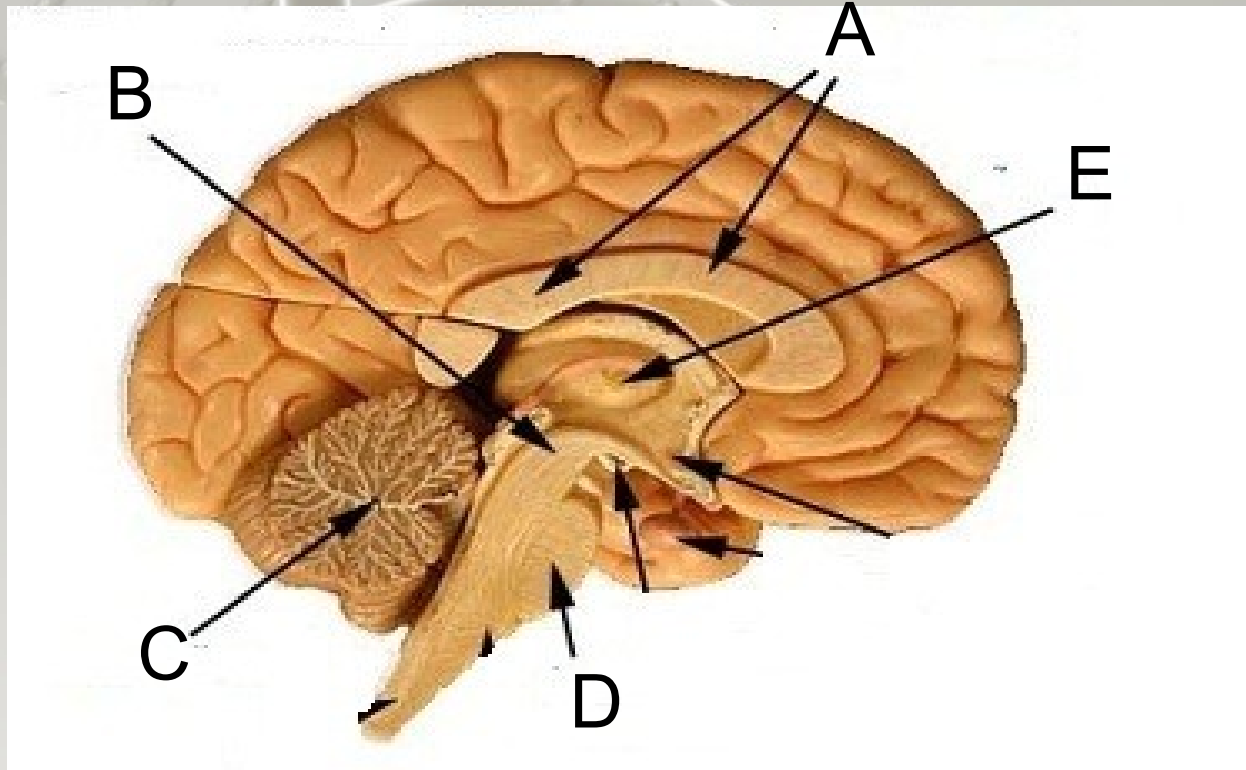
Q-31: Grey matter is composed of _____ while white matter is composed of _____.

- a) Interneurons, synapses
- b) Myelinated axons, cell bodies
- c) Cell bodies, myelinated axons
- d) Sensory neurons, motor neurons

Q-32: The reflex centre for secretion, salivation and swallowing is found in

- a) Spinal cord
- b) Medulla oblongata
- c) Cerebellum
- d) Cerebrum

Q-33: In the following diagram of sagittal section of human brain certain parts have been indicated by alphabets. Choose the answer in which these alphabets have been correctly matched with the parts which they indicate.



- a) A=corpus callosum; B=midbrain;
C=cerebrum; D=pons; E=thalamus.
- b) A=corpus callosum; B=thalamus;
C=cerebellum; D=pons; E=midbrain
- c) A=corpus callosum; B=midbrain;
C=cerebellum; D=pons; E=thalamus
- d) A=medula; B=midbrain;
C=cerebellum; D=pons; E=thalamus

Q-34: Which of these is not a function of one or both of the pituitary gonadotropins?

- a) Stimulate secretion of sex hormones from ovaries and testes
- b) Stimulate growth of ovarian follicles
- c) Promote production of sperm cells in the testes
- d) Stimulate milk production in the mammary gland

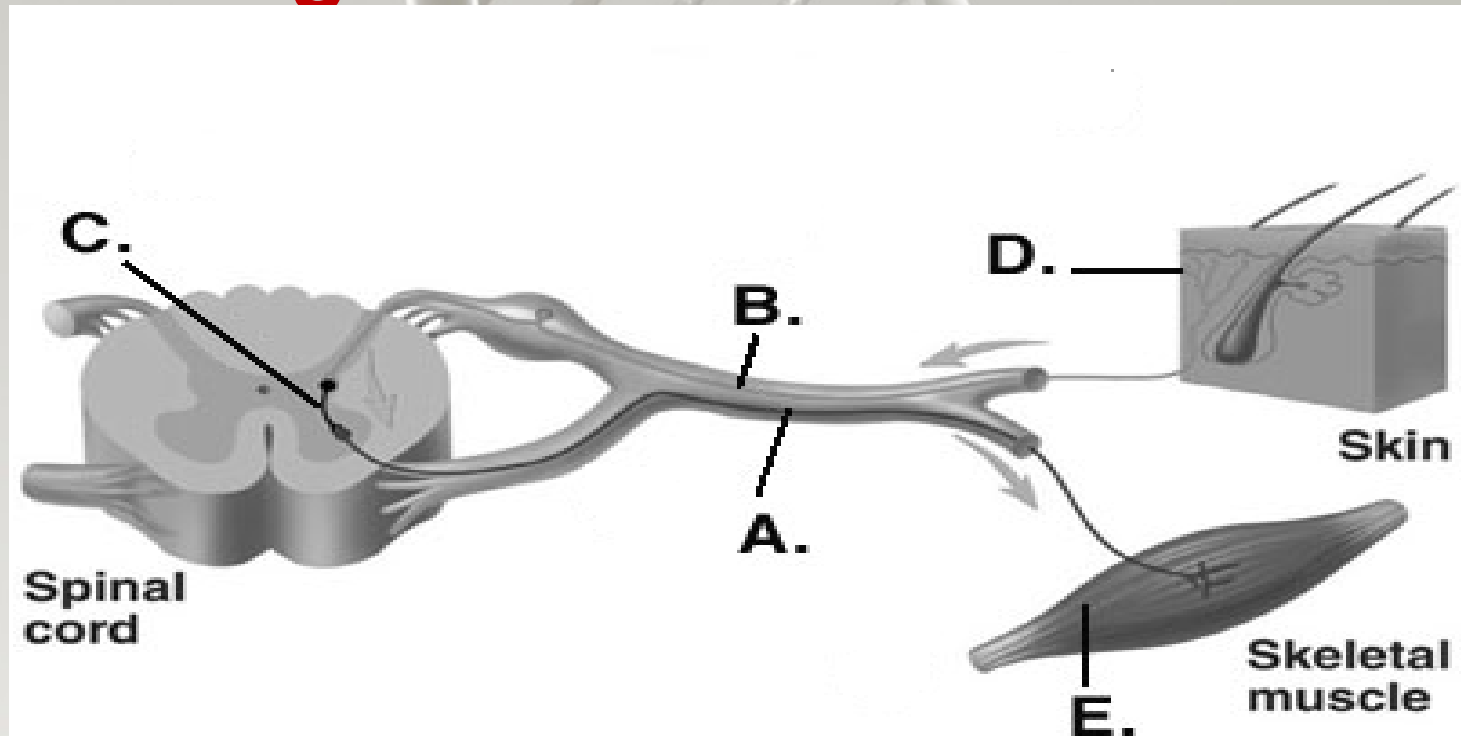
Q-35: Mark the incorrect pair from the following

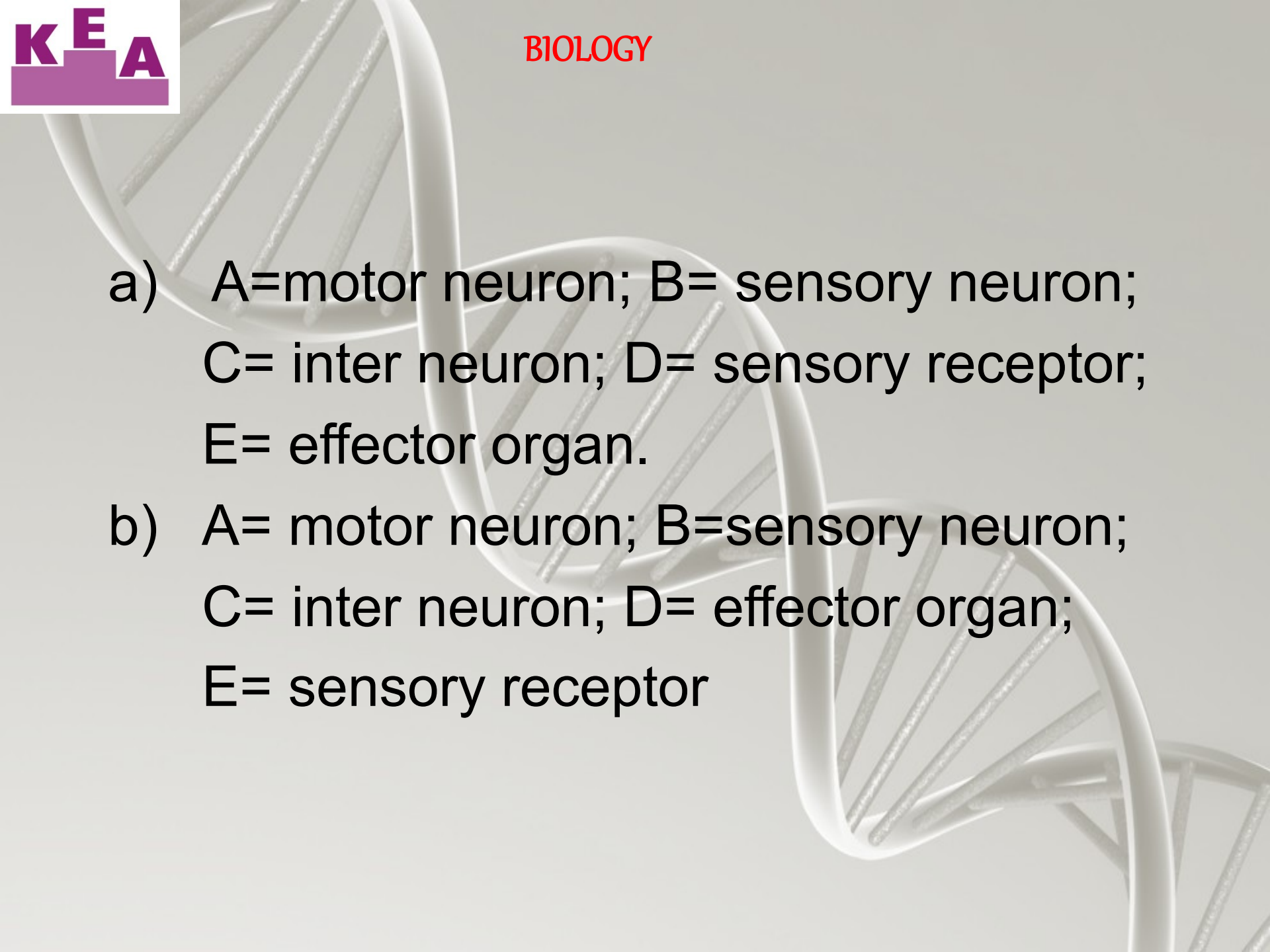
- a) Corpus callosum-myelinated fibres
- b) Choroid plexus-network capillaries
- c) Infundibulum-extension of brain stem
- d) Corpora quadrigemina-mid brain

Q-36: Which of the following is not an endocrine gland?

- a) Hypothalamus
- b) Testes and ovary
- c) Kidney
- d) Cerebrum

Q-37: In the diagram representing reflex arc, identify the correct labellings.



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- A large, light gray DNA double helix structure is visible in the background, winding across the slide.
- a) A=motor neuron; B= sensory neuron;
C= inter neuron; D= sensory receptor;
E= effector organ.
- b) A= motor neuron; B=sensory neuron;
C= inter neuron; D= effector organ;
E= sensory receptor

- c) A= sensory neuron; B= motor neuron;
C= inter neuron; D= sensory receptor;
E= effector organ.
- d) A= inter neuron; B= motor neuron;
C= sensory neuron; D= sensory receptor;
E= effector organ

Q-38: Which one of the following part of brain does not possess a ventricle

- a) Cerebellum
- b) Cerebrum
- c) Diencephalon
- d) Medulla Oblongata

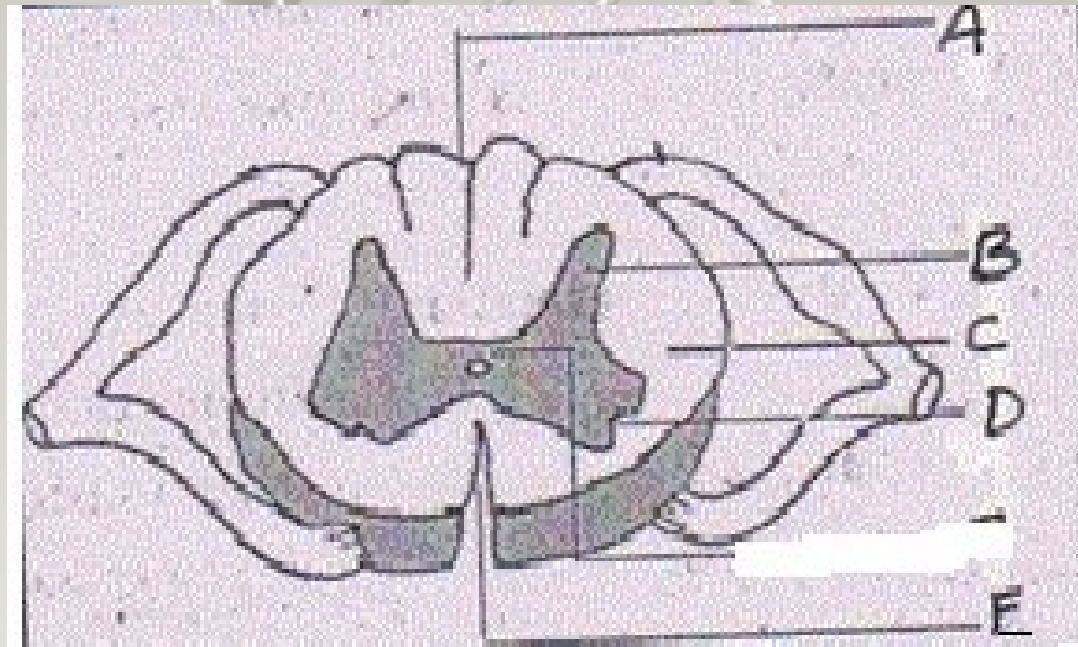
Q-39: Corpora quadrigemina acts as the reflex centres for

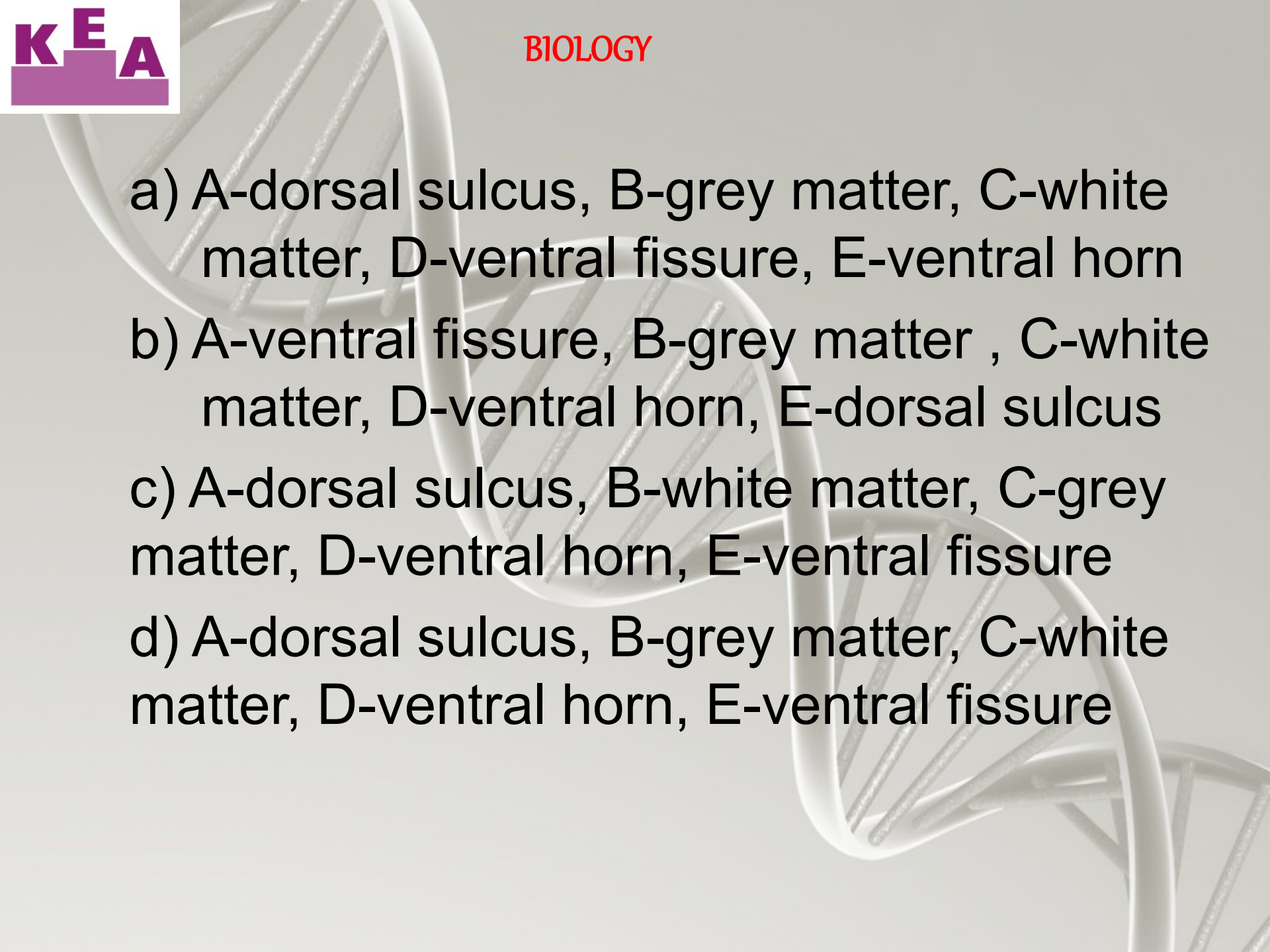
- a) Hunger and satiation
- b) Mastication and salivation
- c) Hearing and vision
- d) Special respiratory movements

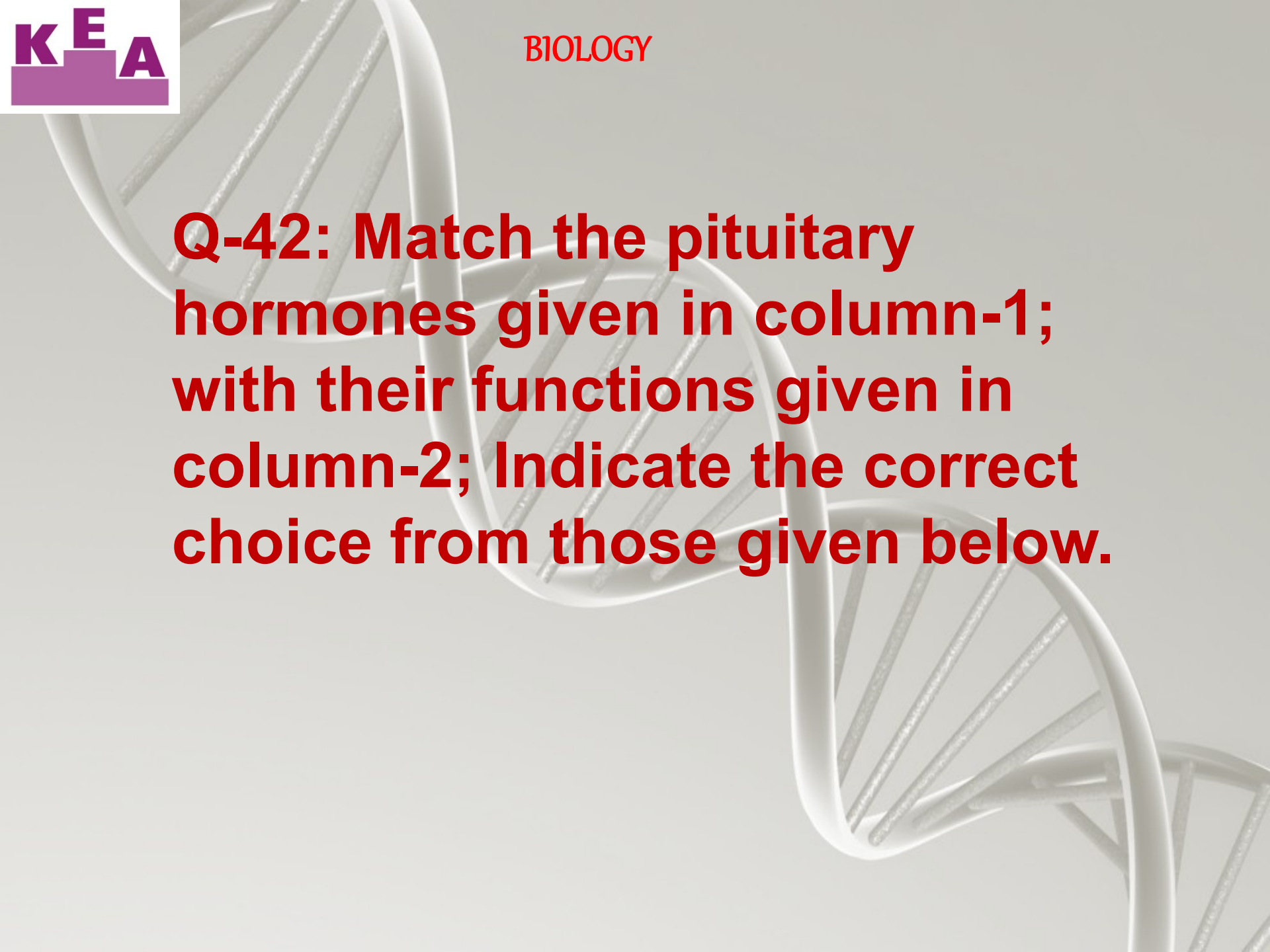
Q-40: Which of the following hormones of pituitary gland are not tropic hormones?

- a) STH and MSH
- b) MSH and ICSH
- c) ICSH and STH
- d) LH and FSH

Q-41: Identify the different parts labelled in the T.S of spinal cord



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- A faint, light-colored DNA double helix structure is visible in the background of the slide, winding across the page.
- a) A-dorsal sulcus, B-grey matter, C-white matter, D-ventral fissure, E-ventral horn
 - b) A-ventral fissure, B-grey matter, C-white matter, D-ventral horn, E-dorsal sulcus
 - c) A-dorsal sulcus, B-white matter, C-grey matter, D-ventral horn, E-ventral fissure
 - d) A-dorsal sulcus, B-grey matter, C-white matter, D-ventral horn, E-ventral fissure

A large, light gray, semi-transparent DNA double helix structure is visible in the background, winding across the page from the top left towards the bottom right.

Q-42: Match the pituitary hormones given in column-1; with their functions given in column-2; Indicate the correct choice from those given below.

column 1

column 2

A. Somatotrophic hormones

B. Prolactin

C. Melanocyte Stimulating hormone

D. Anti-diuretic hormone

p. Normal quantity of urine production

q. Growth of the body

r. Sperm transport hormone

s. Colour of the skin

t. Milk production by mammary glands

a) $A=s$; $B=p$; $C=q$; $D=r$

b) $A=t$; $B=p$; $C=q$; $D=s$

c) $A=q$; $B=t$; $C=s$; $D=p$

d) $A=s$; $B=t$; $C=p$; $D=q$

Q-43: Hallucinogenic drug among the following is

- a) Heroin
- b) Lysergic acid diethylamide
- c) Morphine
- d) Cocaine

Q-44: One of the following is the structure of mesencephalon

- a) Optic lobes
- b) Cerebellum
- c) Thalamus
- d) Mamillary body

Q-45: After having taken alcohol, person feels giddiness and nausea in the next day morning. This type of hangover is due to accumulation of

- a) Depressants
- b) Acetaldehyde
- c) Ethanol
- d) Formaldehyde

Q-46: Match the endocrine cells listed in column-1; with their secretions given in column-2; Choose the answer which gives the correct combination of alphabets in two columns.

column1

- A. Corpus luteum
- B. Interstitial cells
- C. Paraventricular nucleus
- D. Supraoptic nucleus

column2

- p. Progesterone
- q. Vasopressin
- r. Gonadotrophins
- s. Oxytocin
- t. Testosterone

a) $A=p$; $B=t$; $C=q$; $D=s$

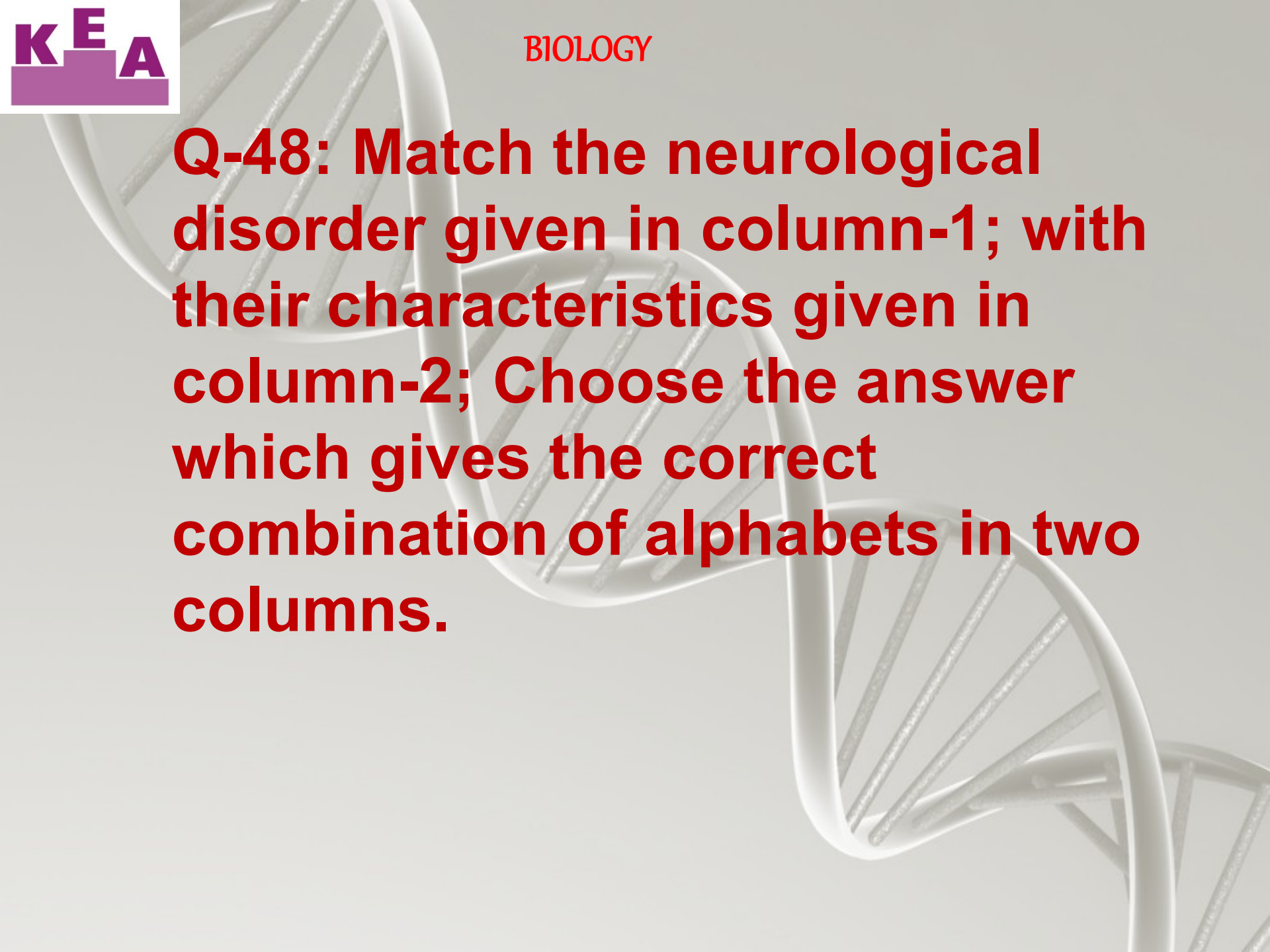
b) $A=r$; $B=t$; $C=s$; $D=q$

c) $A=r$; $B=p$; $C=q$; $D=s$

d) $A=p$; $B=t$; $C=s$; $D=q$

Q-47: Which part of the human brain controls the breathing movements?

- a) Diencephalon
- b) Cerebellum
- c) Medulla oblongata
- d) Cerebrum

A large, semi-transparent, light gray DNA double helix structure is visible in the background, winding across the page from the top left towards the bottom right.

Q-48: Match the neurological disorder given in column-1; with their characteristics given in column-2; Choose the answer which gives the correct combination of alphabets in two columns.

column 1

- A. Epilepsy**
- B. Parkinson's disease**
- C. Alzheimer's disease**
- D. Huntington's disease**

column 2

- p. Degeneration of dopaminergic nerves**
- q. Convulsive seizure**
- r. Secretion and depression**
- s. Flapping movements**
- t. Atrophy of cerebral cortex**

a) $A=t$; $B=s$; $C=q$; $D=p$

b) $A=q$; $B=p$; $C=t$; $D=s$

c) $A=q$; $B=p$; $C=s$; $D=r$

d) $A=q$; $B=r$; $C=p$; $D=s$

Q-49: Identify from the following hormone produced by the pituitary gland in both male and females but functional only in females

- a) Relaxin
- b) Prolactin
- c) Pitocin
- d) Melatonin

Q-50: Which part of human brain controls muscular co-ordination

- a) Cerebrum
- b) Cerebellum
- c) Medulla oblongata
- d) Corpus callosum

Q-51: Which one of the following term used for the white matter of cerebellum which resembles a branched tree end.

- a) Vermis
- b) Pons
- c) Crura cerebri
- d) Arbor vitae

Q-52: Alzheimer's disease in human associated with the deficiency of

- a) Acetylcholine
- b) Glutamic acid
- c) Dopamine
- d) Gamma amino butyric acid(GABA)

Q-53: Which part of the brain is involved in loss of body equilibrium due to intoxication by alcohol?

- a) Cerebrum
- b) Cerebellum
- c) Medulla oblongata
- d) Olfactory lobe

Q-54: International day against drug abuse and illicit trafficking is

- a) July 11
- b) June 05
- c) June 26
- d) Feb 04

Q-55: The macula densa is a part of the

- a) Proximal convoluted tubule
- b) Afferent arteriole
- c) Distal convoluted tubule
- d) Efferent arteriole

Q-56: The positive pressure involved in ultrafiltration is

- a) Glomerular osmotic pressure
- b) Glomerular hydrostatic pressure
- c) Capsular hydrostatic pressure
- d) Effective filtration pressure

Q-57: Ornithine cycle was discovered by

- a) Krebs
- b) Henseleit
- c) Krebs and Henseleit
- d) Ornithine

Q-58: The function of the counter current multiplier is to:

- a) Decrease the concentration of NaCl
- b) Increase the concentration of NaCl
- c) Change the blood levels of potassium
- d) Conserve potassium

Q-59: Which ones are ammonotelic animals

- a) Amphibians and reptiles
- b) Bony fishes and amphibian tadpoles
- c) Cartilaginous and bony fishes
- d) Amphibians and mammals

Q-60: Pons varoli connects

- a) Brain with spinal cord
- b) Cerebrum with cerebellum
- c) Two lobes of cerebellum
- d) Two cerebral hemisphere