

KCET - 2025

ZOOLOGY

Q1 Match the hormone with its site of production:
[KCET 2025]

Hormone	Site of production	
a. hCG and hPL	i.	Ovary
b. Progesterone	ii.	Placenta
c. Androgens	iii.	Corpus luteum
d. Relaxin	iv.	Leydig cells

- (A) a-iii, b-i, c-iv, d-ii
 (B) a-iv, b-i, c-ii, d-iii
 (C) a-i, b-ii, c-iv, d-iii
 (D) a-ii, b-iii, c-iv, d-i

Q2 Choose the correct sequence of sperm transport during ejaculation [KCET 2025]

- (A) Seminiferous tubules rete testis epididymis vasa efferentia vas deferens ejaculatory duct
 (B) Seminiferous tubules vasa efferentia rete testis epididymis vas deferens ejaculatory duct
 (C) Seminiferous tubules rete testis epididymis vas deferens vasa efferentia ejaculatory duct
 (D) Seminiferous tubules rete testis vasa efferentia epididymis vas deferens ejaculatory duct

Q3 Select the mismatched pair :

- (1) First month of pregnancy - Formation of heart
 (2) Second month of pregnancy - Movement of foetus
 (3) Third month of pregnancy - Formation of most of the major organ systems
 (4) Six month of pregnancy - Eye lids separate and eye lashes are found [KCET 2025]
 (A) b (B) c
 (C) d (D) a

Q4 Out of the following options, identify which one is NOT a natural method of contraception ?

- (A) Implants
 (B) Lactational amenorrhea
 (C) Periodic abstinence
 (D) Coitus interruptus

Q5 In zygote intrafallopian tube transfer, the embryo upto which stage is transferred into the fallopian tube [KCET 2025]

- (A) 16 blastomeres (B) 8 blastomeres
 (C) 32 blastomeres (D) 2 blastomeres



- Q6** Read the following statements : [KCET 2025]
 Statement 1: MTP is to get rid off wanted pregnancies due to a causal unprotected intercourse or failure of contraceptives used during coitus or rapes
 Statement II: MTPs are performed legally by qualified doctors by giving proper medical justification
 Choose the correct answer from the options given below :
- (A) Statements I and II are incorrect
 (B) Statement I is correct but Statement II is incorrect
 (C) Statement I is incorrect but Statement II is correct
 (D) Statements I and II are correct
- Q7** How many types of gametes will be formed by a parent with genotype ' AaBbCc '?[KCET 2025]
 (A) 4 (B) 8
 (C) 12 (D) 6
- Q8** When a change in the gene frequency of a population occurs by chance, it is called [KCET 2025]
 (A) Gene migration
 (B) Genetic recombination
 (C) Genetic drift
 (D) Founder effect
- Q9** Darwin's finches represent one of the best examples of [KCET 2025]
 (A) Adaptive radiation
 (B) Chemical evolution
 (C) Genetic equilibrium
 (D) Seasonal migration

- Q10** Choose the correct statements from the following:
 (a) Charles Darwin travelled around the world in a ship called HMS Beagle
 (b) There has been gradual evolution of life forms
 (c) According to Darwin, fitness refers to physical fitness only -
 (d) Fossils are remains of hard parts of life forms found in rocks
 (e) Hugo De Vries, a naturalist worked in Malay Archipelago. [KCET 2025]
 (A) a, c and e are correct
 (B) a, b and d are correct
 (C) a, c and d are correct
 (D) a, b and e are correct
- Q11** In which of the following, HIV replicates and produces its progeny viruses? [KCET 2025]
 (A) Memory T-lymphocytes
 (B) Killer T-lymphocytes
 (C) Suppressor T-lymphocytes
 (D) Helper T-lymphocytes
- Q12** Which of the following are the techniques for detection of cancer of internal organs? [KCET 2025]
 (a) Radiography, MRI
 (b) MRI, computed tomography
 (c) Widal test, radiography
 (d) MRI, widal test
 (A) a and c (B) b and c
 (C) b and d (D) a and b
- Q13** Malignant malaria is caused by [KCET 2025]
 (A) Plasmodium vivax
 (B) Plasmodium falciparum
 (C) Plasmodium rubrum
 (D) Plasmodium malariae



Q14 Read the following statements and select the correct option [KCET 2025]

Statement I: Biocontrol refers to the use of biological methods for controlling plant diseases and pests.

Statement II: Trichoderma species are effective biocontrol agents for several plant pathogens

- (A) Both statement I and statement II are incorrect
 (B) Statement I is incorrect but statement II is correct
 (C) Both statement I and statement II are correct
 (D) Statement I is correct and statement II is incorrect

Q15 Match the contents of List-I with List-II [KCET 2025]

List-I		List-II	
(a)	Bioreactors	i.	Insulin produced by rDNA technology
(b)	Down stream processing	ii.	Vessels which convert raw material into specific Product
(c)	Recombinant protein	iii.	Detect mutated genes in suspected cancer patients
(d)	PCR	iv.	Involves separation and purification.

Choose the correct option from the following

- (A) a-iv, b-ii, c-iii, d-i
 (B) a-i, b-ii, c-iv, d-iii
 (C) a-ii, b-i, c-iii, d - iv
 (D) a-ii, b-iv, c-i, d - iii

Q16 The part of plasmid that codes for proteins involved in the replication of the plasmid is [KCET 2025]

- (A) Selectable marker
 (B) "rop"
 (C) Cloning site
 (D) Ori site

Q17 To isolate DNA from fungal cells, bacterial cells and plant cells, the enzymes required are respectively [KCET 2025]

- (A) Lysozyme, Proteases and Ribonuclease
 (B) Chitinase, Lysozyme and Cellulase
 (C) Cellulase, Protease and Lysozyme
 (D) Lysozyme, Cellulase and Chitinase

Q18 In mature insulin, which of the peptide is not present? [KCET 2025]

- (A) B-peptide
 (B) C-peptide
 (C) A and B peptides
 (D) A-peptide

Q19 A scientist wants to produce virus-free plant in tissue culture. Which part of the plant will he use as an explant?

- (a) Mature stem
 (b) Axillary meristem
 (c) Apical meristem
 (d) Mesophyll cells

Choose the correct option from the following. [KCET 2025]

- (A) b and c
 (B) b only
 (C) c and d
 (D) a only

Q20 Some strains of *Bacillus thuringiensis* produce proteins that kill insects. Which one of the following is not killed by proteins of *Bacillus thuringiensis*? [KCET 2025]

- (A) Armyworm
 (B) Cotton bollworm
 (C) Tapeworm
 (D) Tobacco budworm



Q21 During a field trip, a student observed a marine organism with worm-like body. The cylindrical body was divisible into proboscis, collar and a long truck. The organism may be [KCET 2025]

- (A) Ophiura (B) Pterophyllum
(C) Trygon (D) Balanoglossus

Q22 Which of the following statements are correct with respect to Frogs ?

- (a) Bidder's canals are present in male Frogs
(b) Copulatory pads are present in female Frogs
(c) Sound producing vocal sacs are present in male Frogs
(d) Cloaca is present male Frog only.

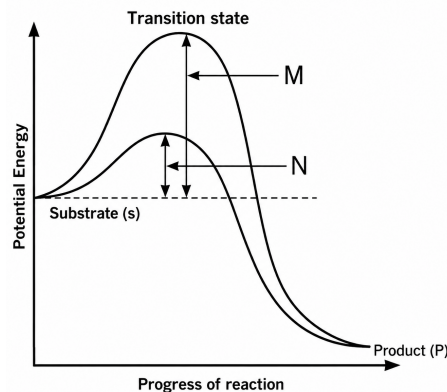
Choose the most appropriate answer from the options given below : [KCET 2025]

- (A) a and b (B) a and c
(C) b and d (D) a and d

Q23 The reserve material in prokaryotic cells are stored in the cytoplasm in the form of [KCET 2025]

- (A) Inclusion bodies
(B) Exclusion and inclusion bodies
(C) Fat bodies
(D) Exclusion bodies

Q24 The graph showing the concept of activation energy of enzyme is given below: [KCET 2025]



Observe the graph and choose the correct option for M and N .

- (A) M-Activation energy without enzyme, N-Activation energy with enzyme
(B) M-High temperature, High activation energy, N-Low temperature, Low activation energy
(C) M-High substrate, High activation energy, N-Low substrate, Low activation energy
(D) M-Activation energy without enzyme, N-Activation energy with enzyme

Q25 The respiratory mechanism controlled by medulla oblongata can be altered by

- (A) Chemosensitive area in the medulla
(B) Both Pneumotaxic and Chemosensitive areas of pons and medulla oblongata
(C) Corpus callosum of brain
(D) Pneumotaxic center in the pons

Q26 Which among the three layers of blood vessel wall - Tunica intima, Tunica media and Tunica Externa is comparatively thin in the veins?

- (A) Tunica intima
(B) Tunica externa
(C) Both tunica media and tunica externa
(D) Tunica media



Q27 In nephron, transport of substances: like sodium chloride and urea is facilitated by the special arrangement called counter current mechanism that comprises of

- (A) Henle's loop and glomerulus
- (B) Vasa Recta and collecting duct
- (C) Ascending limb and collecting duct
- (D) Henle's loop and Vasa Recta

Q28 In the mechanism of muscle contraction or shortening of muscle, the ____ get reduced whereas the _____ retain the length. [KCET 2025]

- (A) I bands, A bands
- (B) Z line, I bands
- (C) A bands, line
- (D) A bands, I bands

Q29 Identify the correct sequence of action potential as it arrives at the axon terminal from the choices given below: [KCET 2025]

- (A) Axon terminal Synaptic cleft Synaptic vesicles Post-synaptic neuron Post-synaptic membrane
- (B) Axon terminal Post-synaptic membrane Synaptic cleft Synaptic vesicles Post-synaptic neuron
- (C) Axon terminal Synaptic vesicles Post-synaptic membrane Synaptic cleft Post-synaptic neuron
- (D) Axon terminal Synaptic vesicles Synaptic cleft Post-synaptic membrane Post-synaptic neuron

Q30 Identify the statement/s given below that does not correspond to the functions of cortisol

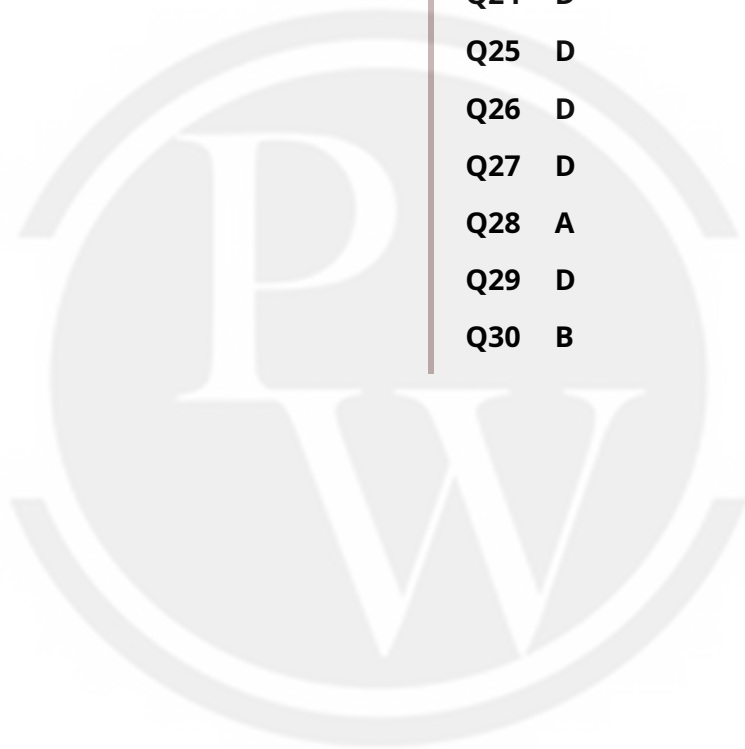
- (i) Maintains cardiovascular system and kidney functions
 - (ii) Decrease gluconeogenesis
 - (iii) Maintains electrolyte balance, osmosis and blood pressure
 - (iv) Suppresses immune response
 - (v) Stimulates RBC production [KCET 2025]
- (A) (iii) and (v) only
 - (B) (ii) only
 - (C) (iv) only
 - (D) (i) and (ii) only



Answer Key

Q1 D
 Q2 D
 Q3 A
 Q4 A
 Q5 B
 Q6 C
 Q7 B
 Q8 C
 Q9 A
 Q10 B
 Q11 D
 Q12 D
 Q13 B
 Q14 C
 Q15 D

Q16 B
 Q17 B
 Q18 B
 Q19 A
 Q20 C
 Q21 D
 Q22 B
 Q23 A
 Q24 D
 Q25 D
 Q26 D
 Q27 D
 Q28 A
 Q29 D
 Q30 B



Hints & Solutions

Note: scan the QR code to watch video solution

Q1 Text Solution:

Answer: (D) a-ii, b-iii, c-iv, d-i

Explanation:

- **hCG and hPL** are produced by the **placenta**.
- **Progesterone** is secreted mainly by the **corpus luteum** during early pregnancy.
- **Androgens** are produced by the **Leydig cells** of the testes.
- **Relaxin** is produced by the **ovary (corpus luteum)** during pregnancy and later by the placenta.

Q2 Text Solution:

Answer: (D) Seminiferous tubules Rete testis
Vasa efferentia Epididymis Vas deferens
Ejaculatory duct

Explanation:

Sperms are produced in the seminiferous tubules. They pass through the rete testis and vasa efferentia into the epididymis, where they mature. During ejaculation, they move through the vas deferens and finally enter the ejaculatory duct.

Q3 Text Solution:

Answer: (A) First month of pregnancy - Formation of heart

Explanation:

The mismatched statement is "**Second month of pregnancy - Movement of foetus.**" Foetal movements are first felt by the mother during the **fifth month**, not the second month. Hence option (A) is correct because it corresponds to statement **b**.

Q4 Text Solution:

Answer: (A) Implants

Explanation:

Implants release synthetic hormones to prevent pregnancy and are therefore an **artificial hormonal contraceptive**. Natural methods include periodic abstinence, lactational amenorrhea, and coitus interruptus.

Q5 Text Solution:

Answer: (B) 8 blastomeres

Explanation:

In **Zygote Intra-Fallopian Transfer (ZIFT)**, the zygote or embryo up to the **8-cell (blastomere) stage** is transferred into the fallopian tube. Embryos beyond this stage are transferred into the uterus.

Q6 Text Solution:

Answer: (C) Statement I is incorrect but Statement II is correct.

Explanation:

Statement I is incorrect because MTP is performed to terminate **unwanted pregnancies**, not wanted pregnancies. Statement II is correct because legal MTPs are performed by qualified medical practitioners under the Medical Termination of Pregnancy Act.

Q7 Text Solution:

Answer: (B) 8

Explanation:

The number of gametes formed by an individual is given by 2^n , where **n** is the number of heterozygous gene pairs. Since AaBbCc has **3 heterozygous pairs**, the number of gametes is $2^3 = 8$.



Q8 Text Solution:**Answer: (C) Genetic drift****Explanation:**

Genetic drift is the random change in allele frequency due to chance events. It is more significant in small populations and may lead to the loss or fixation of alleles.

Q9 Text Solution:**Answer: (A) Adaptive radiation****Explanation:**

Darwin's finches evolved from a common ancestor into several species adapted to different ecological niches. This process is called **adaptive radiation**.

Q10 Text Solution:**Answer: (B) a, b and d are correct****Explanation:**

- (a) Darwin travelled in **HMS Beagle** – Correct.
- (b) Evolution occurred gradually – Correct.
- (c) Fitness refers only to physical fitness – Incorrect. Darwinian fitness means **reproductive success**.
- (d) Fossils are preserved remains or impressions of ancient organisms found in rocks – Correct.
- (e) Hugo de Vries worked on **Oenothera (evening primrose)**, not the Malay Archipelago. That was **Alfred Russel Wallace**.

Q11 Text Solution:**Answer: (D) Helper T-lymphocytes****Explanation:**

HIV specifically infects **CD4⁺ Helper T-lymphocytes** because these cells possess CD4 receptors to which the virus binds. After entering the cell, HIV converts its RNA into DNA using **reverse transcriptase**, integrates into the host genome, and produces new virus particles. The gradual destruction of Helper T-cells weakens the immune system, leading to AIDS.

Q12 Text Solution:**Answer: (D) a and b****Explanation:**

Internal cancers are commonly diagnosed using imaging techniques such as:

- **Radiography (X-rays)**
- **MRI (Magnetic Resonance Imaging)**
- **CT (Computed Tomography) scan**

The **Widal test** is used to diagnose **typhoid fever**, not cancer. Therefore, only statements (a) and (b) are correct.

Q13 Text Solution:**Answer: (B) Plasmodium falciparum****Explanation:**

Plasmodium falciparum causes **malignant (cerebral) malaria**, the most severe and potentially fatal form of malaria. It infects red blood cells of all ages, resulting in a high level of parasitic infection. *P. vivax* causes benign tertian malaria, while *P. malariae* causes quartan malaria.



Q14 Text Solution:

Answer: (C) Both Statement I and Statement II are correct.

Explanation:

Biocontrol is the use of living organisms to control plant pests and diseases instead of chemical pesticides.

Trichoderma is a beneficial fungus that suppresses several disease-causing fungi in the soil. It acts by competing for nutrients and producing antifungal substances. Hence, both statements are correct.

Q15 Text Solution:

Answer: (D) a-ii, b-iv, c-i, d-iii

Explanation:

- **Bioreactors** Vessels used for large-scale production
- **Downstream processing** Separation and purification of the final product
- **Recombinant protein** Insulin produced by recombinant DNA technology
- **PCR** Detection of mutated genes in suspected cancer patients

Q16 Text Solution:

Answer: (B) rop

Explanation:

The **rop (repressor of primer)** gene regulates plasmid replication by controlling the plasmid copy number. It ensures that the plasmid does not replicate excessively inside the bacterial cell.

Q17 Text Solution:

Answer: (B) Chitinase, Lysozyme and Cellulase

Explanation:

Different organisms possess different cell wall components:

- **Fungi:** Cell wall contains **chitin**, which is digested by **chitinase**.
- **Bacteria:** Cell wall contains **peptidoglycan**, which is broken down by **lysozyme**.
- **Plants:** Cell wall contains **cellulose**, which is digested by **cellulase**.

Q18 Text Solution:

Answer: (B) C-peptide

Explanation:

Insulin is initially synthesized as **proinsulin**, consisting of **A, B and C peptides**. During maturation, the **C-peptide** is removed, leaving only the **A and B chains** connected by disulfide bonds to form mature insulin.

Q19 Text Solution:

Answer: (A) b and c (Axillary meristem and Apical meristem)

Explanation:

Viruses generally fail to invade the rapidly dividing cells of the **apical and axillary meristems**. Therefore, these tissues are cultured to produce **virus-free plants**, a technique widely used in crops such as potato, sugarcane and banana.



Q20 Text Solution:**Answer: (C) Tapeworm****Explanation:**

Bacillus thuringiensis (Bt) produces **Cry proteins**, which are toxic to the larvae of several insects such as:

- Cotton bollworm
- Tobacco budworm
- Armyworm

These toxins act specifically on the alkaline gut of insect larvae. **Tapeworm** is a parasitic flatworm and is **not affected** by Bt toxins.

Q21 Text Solution:**Answer: (D) Balanoglossus****Explanation:**

Balanoglossus is a marine hemichordate whose body is characteristically divided into **three regions**:

- **Proboscis**
- **Collar**
- **Trunk**

This tripartite body plan is the identifying feature of hemichordates. The other organisms listed do not possess this body organization.

Q22 Text Solution:**Answer: (B) a and c****Explanation:**

- **(a) Bidder's canals are present in male frogs – Correct.** They connect the testes to the kidneys.
- **(b) Copulatory pads are present in female frogs – Incorrect.** Male frogs possess **nuptial pads**
- **(c) Vocal sacs are present in male frogs – Correct.** They help amplify mating calls.
- **(d) Cloaca is present only in male frogs – Incorrect.** Cloaca is present in **both male and female frogs**.

Hence, statements **(a)** and **(c)** are correct.

Q23 Text Solution:**Answer: (A) Inclusion bodies****Explanation:**

Prokaryotic cells lack membrane-bound organelles. Reserve materials such as **glycogen, polyphosphate and lipid granules** are stored as **inclusion bodies** in the cytoplasm. These inclusions serve as food reserves and are not enclosed by membranes.

Q24 Text Solution:**Answer: (D) M – Activation energy without enzyme; N – Activation energy with enzyme****Explanation:**

Enzymes increase the rate of a reaction by **lowering the activation energy** required to initiate the reaction. They do **not** alter the free energy change (ΔG) or the equilibrium of the reaction. Therefore, the higher energy barrier (**M**) represents the reaction **without an enzyme**, while the lower barrier (**N**) represents the reaction **with an enzyme**.

Q25 Text Solution:**Answer: (D) Pneumotaxic centre in the pons****Explanation:**

The **medullary respiratory centre** generates the basic rhythm of breathing. The **pneumotaxic centre**, located in the pons, modifies this rhythm by regulating the duration of inspiration. Increased activity of the pneumotaxic centre shortens inspiration, thereby increasing the breathing rate.

Q26 Text Solution:**Answer: (D) Tunica media****Explanation:**

The walls of veins are thinner than those of arteries because blood flows through veins under low pressure. Consequently:

- **Tunica media** (smooth muscle layer) is comparatively **thin**.
- **Tunica externa** is relatively thicker.
- Veins also possess **valves** to prevent the backflow of blood.



Q27 Text Solution:**Answer: (D) Henle's loop and Vasa recta****Explanation:**

The **counter-current mechanism** is established by the **Loop of Henle** and the **Vasa recta**. It creates a high osmotic gradient in the renal medulla, enabling maximum water reabsorption from the collecting ducts and allowing the kidneys to produce concentrated urine.

Q28 Text Solution:**Answer: (A) I bands, A bands****Explanation:**

According to the **sliding filament theory**:

- **I bands** become shorter as thin filaments slide inward.
- **A bands** remain unchanged because the length of the thick (myosin) filaments does not change.
- The **H zone** also decreases or may disappear during complete contraction.

Q29 Text Solution:

Answer: (D) Axon terminal Synaptic vesicles Synaptic cleft Postsynaptic membrane Postsynaptic neuron

Explanation:

When an action potential reaches the **axon terminal**, it triggers the release of neurotransmitters from **synaptic vesicles**. These neurotransmitters diffuse across the **synaptic cleft**, bind to receptors on the **postsynaptic membrane**, and initiate a new impulse in the **postsynaptic neuron**.

Q30 Text Solution:

Statement (ii) is incorrect regarding cortisol: Cortisol actually **increases** or stimulates gluconeogenesis (the production of glucose from non-carbohydrate sources like amino acids and fatty acids) to elevate blood sugar levels during stress. Therefore, it does not decrease


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