

# FIRST REVISION EXAMINATION-2025

SUNDARAM GOVT.BOYS.HR.SEC.SCHOOL-THIRUMAZHISAI

THIRUVALLUR DISTRICT

BIOLOGY ANSWER KEY

PART II-BIOZOOLOGY

1. b)Thelytoky
2. b) Inhibition of spermatogenesis.
3. a)Stevens
4. d) Replication, Transcription, Translation
5. b) Alcohol
6. c) 10th August
7. b) Regulate
8. c) Fluorosis

9. What is parthenogenesis? Give examples ?

☆ The process of development of an egg into a complete individual without fertilization is known as parthenogenesis . Eg. Annelid and sea urchin eggs.

10. Name the active chemical found in the medicinal plant *Rauwolfia vomitoria*. Whattype of diversity it belongs

- *Rouwolfia vomitaria*, a medicinal plant growing in different ranges of the **Himalayas**.
- Concentration of the active ingredient **reserpine** due to **genetic diversity**.

11. Explain how “Rosie” is different from a normal cow ?

In 1997, Rosie, the first transgenic cow produced human protein enriched milk, which contained the human alpha lactalbumin. □ The protein rich milk (2.4 gm/litre) was a nutritionally balanced food for new born babies than the normal milk produced by the cows.

12. Define Ethology.

*Ethology is the scientific study of animal behaviour, under natural conditions.*

13. Mayer – Rokitansky syndrome :-

All women are born with ovaries, but some do not have functional uterus. This condition is called Mayer-Rokitansky syndrome.

14. Name the three zones of lymph node?

- ☉ Lymph node has 3 zones. They are the **cortex, paracortex and medulla**.
- ☉ The outer most layer of the lymph node is called **cortex**, which consists of B-lymphocytes, macrophages, and follicular dendritic cells.
- ☉ The **paracortex** zone is beneath the cortex, which is richly populated by T lymphocytes and interdigitating dendritic cells.
- ☉ The inner most zone is called the **medulla** which is sparsely populated by lymphocytes, but many of them are plasma cells, which actively secrete antibody molecules.

15. FUNCTIONS OF REPRODUCTIVE SYSTEM

- Production of gametes
  - Transportation of gametes
  - Sustenance of gametes
  - Nurturing the offspring
  - Production of hormones
- (ANY THREE)

16. Write short notes on Cryopreservation

- **Cryopreservation** is the preservation of **embryos for future use**.
- • **Embryo cryopreservation can provide an additional opportunity** for pregnancy, through a **Frozen embryo transfer (FET)**, without undergoing another **ovarian stimulation and retrieval**.

**17. Differentiate totipotent and pluripotent**

Totipotent	Pluripotent
<b>Totipotency (Toti-total)</b> - It is the ability of a single cell to divide and produce all of the differentiated cells in an organism.	<b>Pluripotency (Pluri-several)</b> - refers to a stem cell that has the potential to differentiate into any of the three germ layers-ectoderm, endoderm and mesoderm.

**18. Give the characters of a Biome ?**

1. Location, Geographical position (Latitude, Longitude).
  2. Climate and physiochemical environment.
  3. Predominant plant and animal life.
  4. Boundaries between biomes are not always sharply defined. Transition or transient zones are seen as in case of grassland and forest biomes.
- (ANY THREE)**

**19. Mention the main objections to Darwinism.**

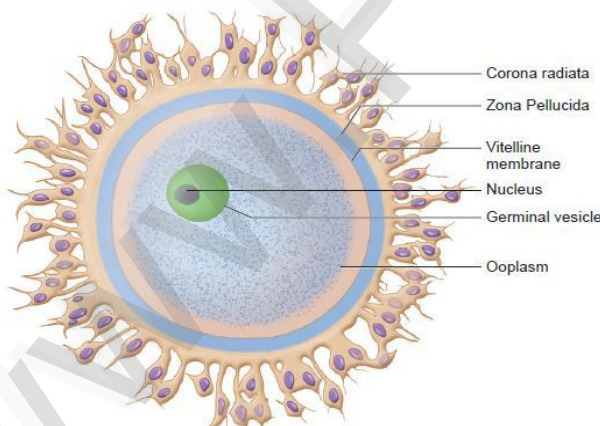
- 1) Darwin failed to explain the mechanism of variation.
- 2) Darwinism explains the survival of the fittest but not the arrival of the fittest.
- 3) He focused on small fluctuating variations that are mostly non-heritable.
- 4) He did not distinguish between somatic and germinal variations.
- 5) He could not explain the occurrence of vestigial organs, over specialization of some organs like large tusks in extinct mammoths, oversized antlers in the extinct Irish deer, etc.,

**(ANY THREE)**

**20. Describe the structure of the human ovum with a neat labelled diagram?**

- ⊙ Human ovum is microscopic, non - cleidoic and alecithal.
- ⊙ It's cytoplasm is called Ooplasm. Ooplasm contains large nucleus called germinal vesicle.
- ⊙ It has outer thick coat of follicular cells called corona radiata.
- ⊙ The middle thick layer is called zona pellucida.
- ⊙ The inner thin transparent layer is called vitelline membrane.
- ⊙ Between the vitelline membrane and zona pellucida is a narrow space called perivitelline space.

**(Explanation 3 marks, Diagram and label 2 marks)**



**Structure of HIV virus.**

- ❖ The human immunodeficiency virus belongs to the genus **Lentivirus**.
- ❖ HIV is seen as a **spherical virus, 100-120 nm** in diameter, containing a **dense core surrounded by a lipoprotein envelope**.
- ❖ The envelope has **glycoprotein(gp)** spikes termed gp 41 and gp 120.
- ❖ At the core, there are two large **single stranded RNA**.
- ❖ Attached to the RNA are molecules of **reverse transcriptase**.
- ❖ It also contains enzymes like **protease and ribonuclease**.
- ❖ The **core is covered by a capsid** made of proteins.
- ❖ This is followed by another layer of **matrix proteins**.

**(Explanation 3 marks, Diagram and label 2 marks)**

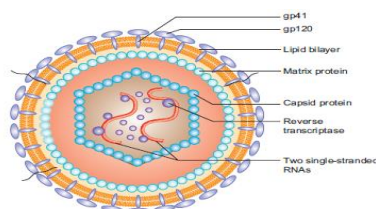


Fig. 7.18 Structure of HIV

**21. The salient features of genetic code :-**

- 1) The genetic codon is a **triplet code** and 61 codons code for amino acids and 3 codons do not code for any amino acid and function as **stop codon** (Termination).
- 2) The genetic code is universal. It means that all known living systems use nucleic acids
- 3) A degenerate code means that more than one triplet codon could code for a specific amino acid. For example, codons GUU, GUC, GUA and GUG code for valine.
- 4) Non-ambiguous code means that one codon will code for one amino acid.
- 5) The code is always read in a fixed direction i.e. from 5'→3' direction called polarity.
- 6) AUG has dual functions. It acts as a initiator codon and also codes for the amino acid methionine.
- 7) **UAA, UAG** (tyrosine) and **UGA** (tryptophan) codons are designated as termination (stop) codons and also are known as “**non-sense**” codons.

(ANY FIVE)

**Give an account of the properties of soil.**

**1. Texture of soil:**

1. The texture of soil is determined by the size of the soil particles. The types of soil include sand, silt and clay on the basis of their size differences.

**2. Porosity:**

1. The space present between soil particles in a given volume of soil are called pore spaces.
2. The percentage of soil volume occupied by pore space or by the interstitial spaces is called porosity of the soil.

**3. Permeability of soil:**

1. The characteristic of soil that determines the movement of water through pore spaces is known as soil permeability.
2. Soil permeability is directly dependent on the pore size.
3. Water holding capacity of the soil is inversely dependent on soil porosity.

**4. Soil temperature:**

1. Soil gets its heat energy from solar radiation, decomposing organic matter, and heat from the interior of earth.
2. Soil temperature effects the germination of seeds, growth of roots and biological activity of soil-inhabiting micro and macro organisms.

**5. Soil water:**

In soil, water is not only important as a solvent and transporting agent, but also maintains soil texture, arrangement and compactness of soil particles, making soil habitable for plants and animals.

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