ULTIMATE KCET

CRASH COURSE 2026

(Zoology) | Lecture - 01

PYQ Session

By – Raghunath Sir

Recap *of previous lecture*

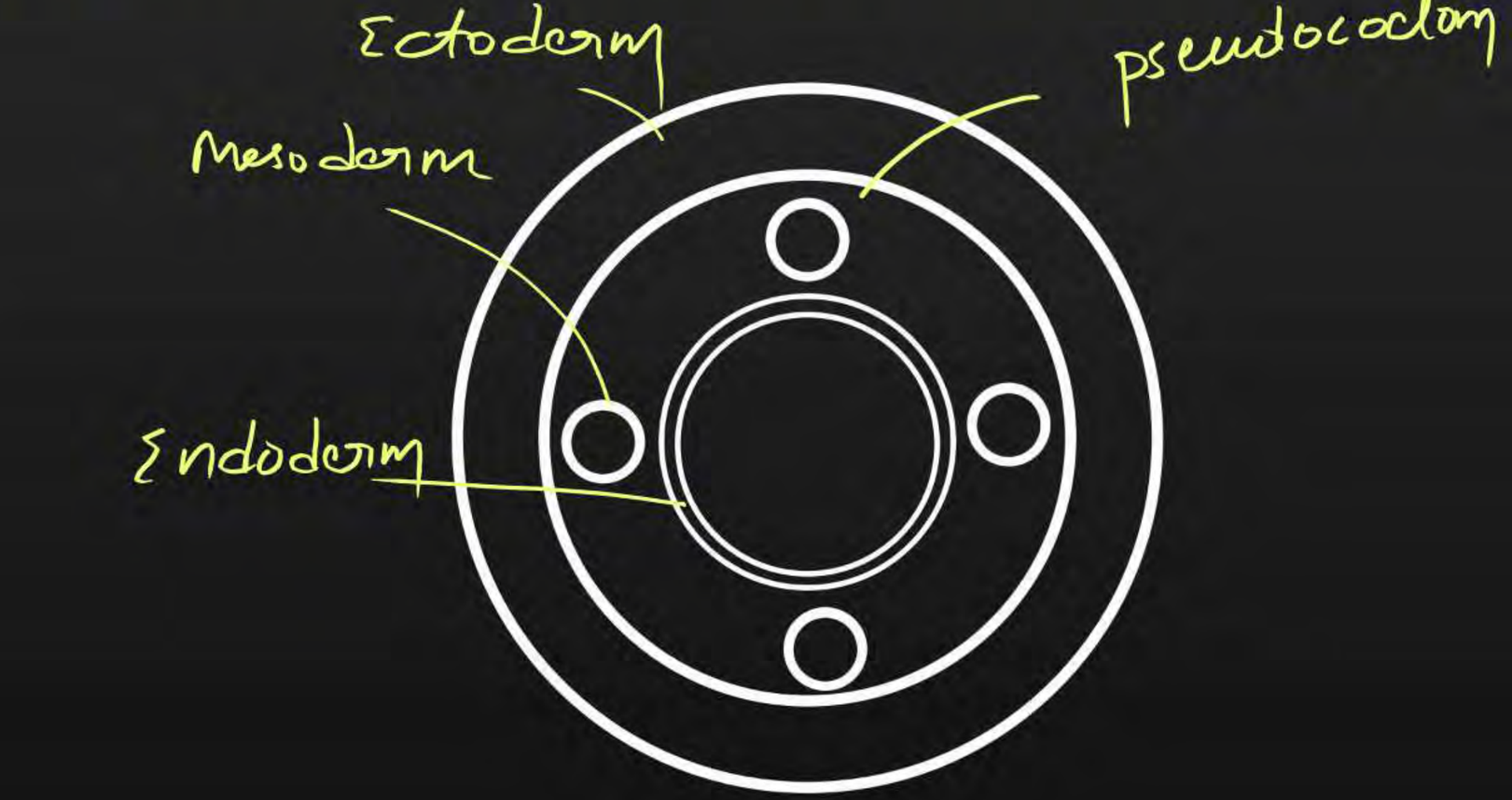
1. Locomotion and Movement
2. Neural Control and Coordination
3. Chemical Coordination and Integration
4. Most Important MCQs

Topics *to be covered*

1. Previous Year Questions
2. Most Important MCQs

Question 2019 Animal Kingdom

Which of the following phyla possess body cavity as shown in the diagram below?



A *Annelida* ✗

B *Porifera* ✗

C *Aschelminthes* ✓

D *Coelenterata* ✗

Question 2018 Biomolecules

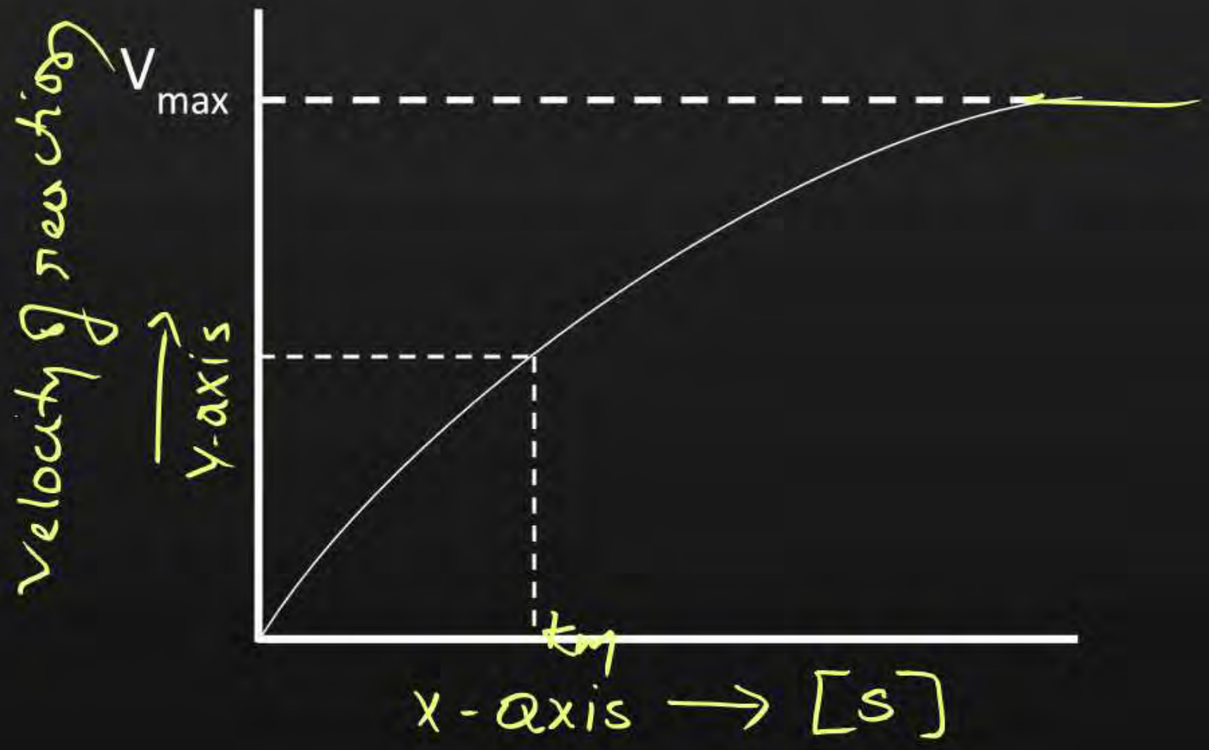
The following graph shows concentration of substrate on enzyme activity: What does the Y-axis represent?

A Temperature

B Velocity of reaction

C pH

D Pressure



Question 2019 Biomolecules

What is the function of Protein GLUT-4?

A Acts as an enzyme → Trypsin ✗

B Enables glucose transport into cells ✓

C Fights infectious agents - Antibodies

D Functions as intercellular ground substance ✗ Collagen

Question 2020

Biomolecules

The element whose percentage weight is highest in both earth's crust and human body is

A Calcium

B Hydrogen

C Carbon

D Oxygen

Question 2021 Biomolecules

Match the animals of Column I with their respective classes in Column II and choose the correct answer.

Column - I		Column - II	
a	Trypsin (iii)	i	Fights infectious agents
b	GLUT-4 (iv)	ii	Is an intercellular ground substance
c	Collagen (ii)	iii	Works as an enzyme
d	Antibody (i)	iv	Enables glucose transport into cells

A a-iv, b-iii, c-i, d-ii

B a-iv, b-iii, c-i, d-ii

C a-iii, b-iv, c-i, d-ii

D a-iii, b-iv, c-ii, d-i

Question 2017

Body Fluids and Circulation

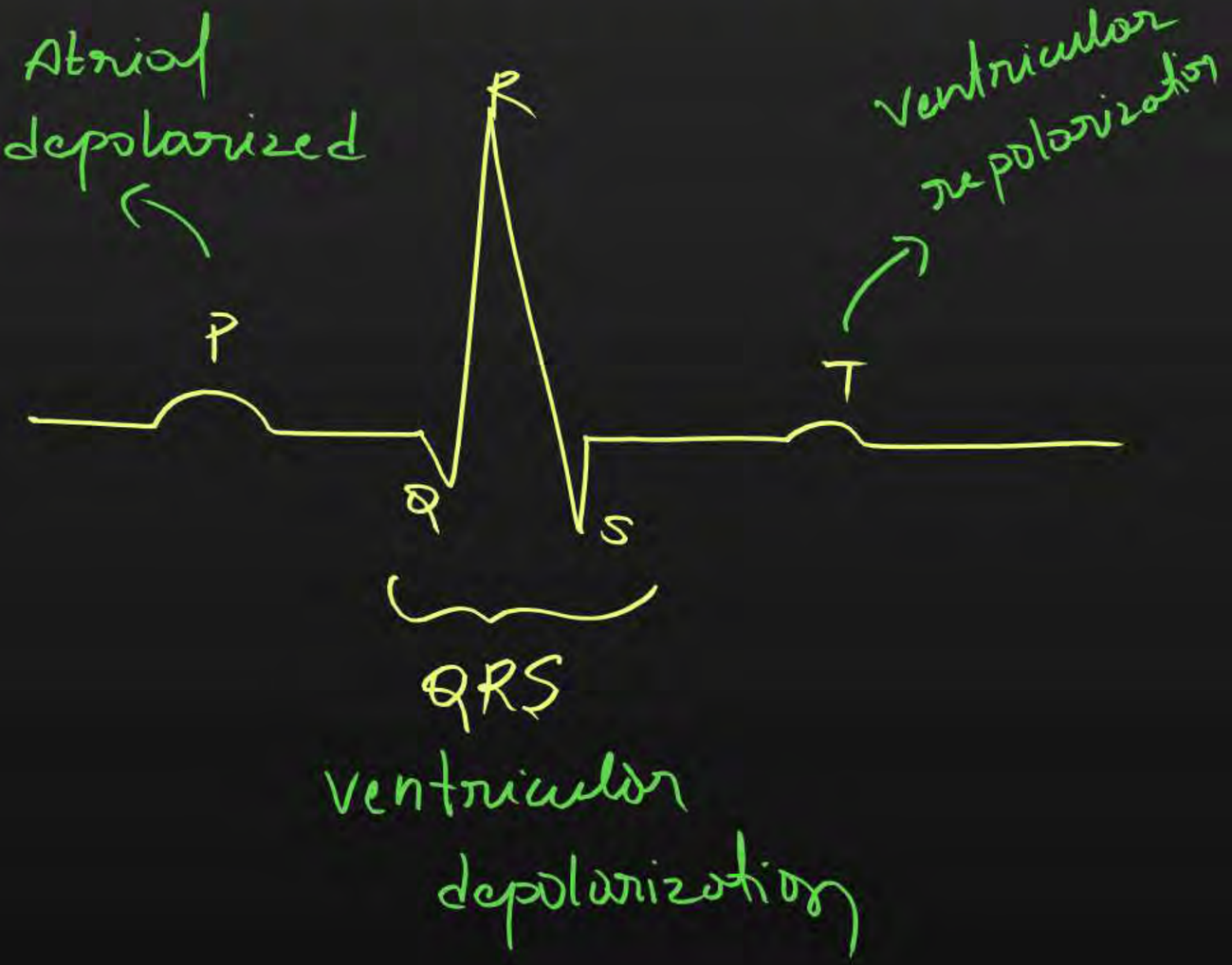
In the following diagrammatic representation of a standard ECG, the 'T' represents.

A Depolarisation of atria

B Depolarisation of ventricles

C Repolarisation of atria

D Repolarisation of ventricles ✓



Question 2017

Body Fluids and Circulation

The blood cell that secretes histamine, serotonin and heparin is

→ Inflammatory reaction

A Neutrophil – phagocytic

B T-lymphocyte – immune response

C Killer cell

D Basophil ✓

Question

2018

Body Fluids and Circulation

Rh incompatibility

Select the correct Rh-blood groups of the parents, whose child is affected with erythroblastosis fetalis.

→ Jaundice, anaemia

A Both father and mother are Rh +ve

B Mother is Rh +ve and father is Rh -ve

C Both father and mother are Rh -ve

D Father is Rh +ve and mother is Rh -ve

→ Rh antigen

→ Antibodies

Father → Rh +ve

Rh

RBC

Mother → Rh -ve

RBC

Question 2019

Body Fluids and Circulation

Choose the correct statement from the following.

A. Erythroblastosis fetalis may result when foetus is Rh negative and mother is Rh positive.

B. Histamine, serotonin and heparin are secreted by basophils.

C. Atherosclerosis is often referred as angina pectoris.

D. Person with blood group AB can donate blood to person with blood group A.

Question 2021

Body Fluids and Circulation

Calculate the cardiac output of an individual having 70 heart beats/min with a stroke volume of 55 mL.

A 3750 mL

B 125 mL

C 3850 mL

D None of the above

$SV = EDV - ESV$

$CO = SV \times HR$

$CO = 55 \times 70$

$CO = 3850\ mL$ | $CO = 3.85\ L$

Question 2015

Excretory Products and Their Elimination

A fall in glomerular filtration rate activate

A. Adrenal medulla to release adrenaline ✗

B. Juxtaglomerular cells to release renin ✓

C. Posterior pituitary to release vasopressin ✗

D. Adrenal cortex to release aldosterone ✗

Fall in GFR

↓

JG cells

↓

Renin

↓

Angiotensinogen → Angiotensis-II

↓

Blood pressure ↑

↓

GFR ↑

Question 2016

Excretory Products and Their Elimination

Facultative absorption of water from 'primary urine is influenced by the hormone

A Androgens ✗

B Epinephrine ✗

C Vasopressin (Anti-diuretic hormone)

D Thyroxine ✗

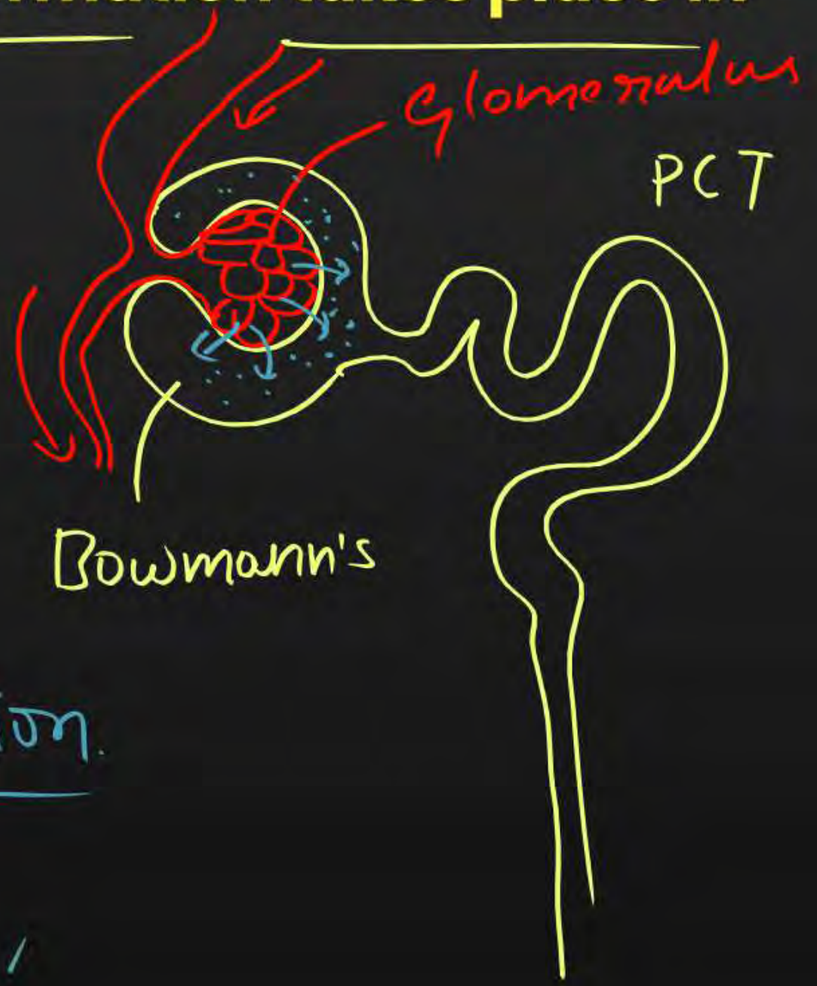
prevents the diuresis

↳ loss of excessive water

Question 2022

Excretory Products and Their Elimination

Filtration of blood during urine formation takes place in



A Collecting duct ✗

B DCT ✗

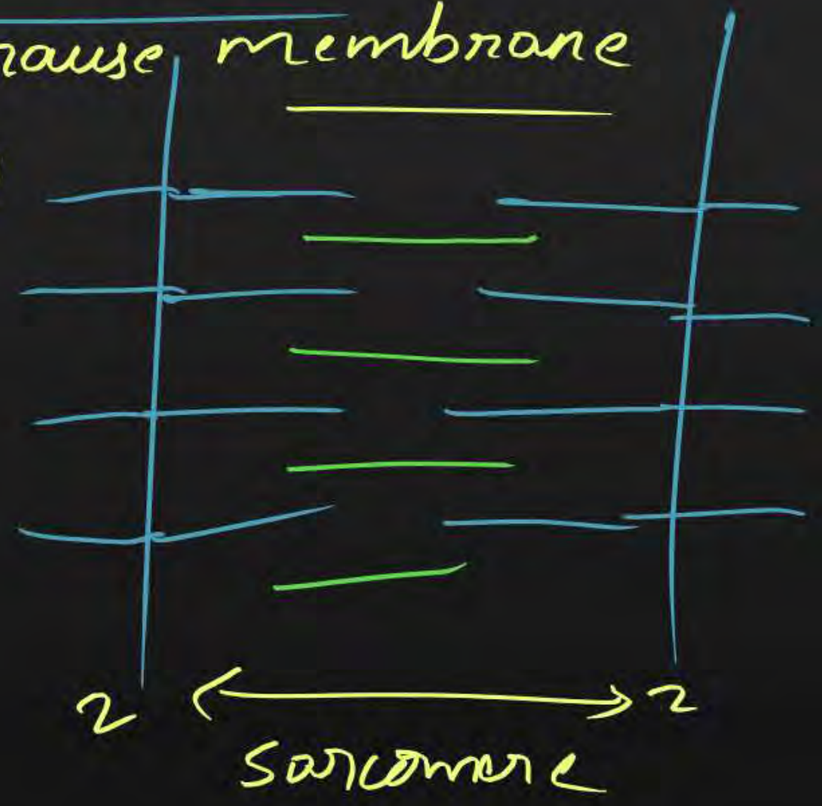
C Glomerulus ✓

D PCT ✗

Ultrafiltration.

Questio **2016** **Locomotion and Movement**

Sarcomere is the functional unit of contraction in muscle fibre. Identify the portion of myofibril that constitute a sarcomere.



A The portion of myofibril between two successive Z' line

B The portion of myofibril between two successive 'I' band

C The portion of myofibril between two successive 'A' band

D The portion of myofibril between two successive 'M' line

Question 2020

Neural Control and Coordination

In which part of the human brain corpora quadrigemina is located?

A Cerebral hemisphere

B Forebrain

C Hindbrain

D Midbrain

Question 2022

Neural Control and Coordination

Corpus callosum connects the

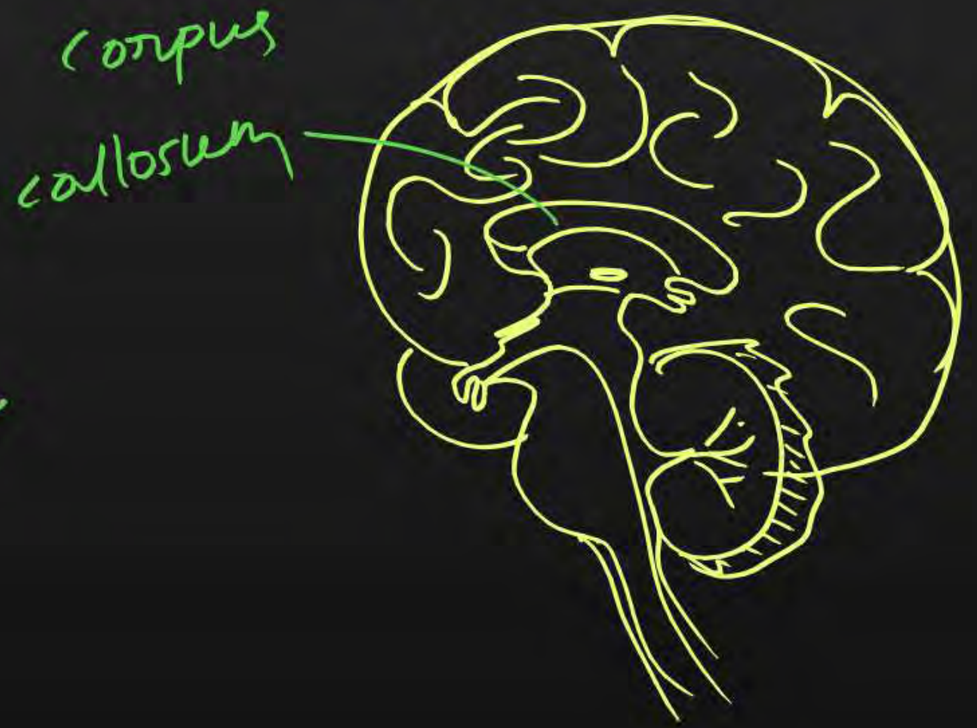
→ Tract of nerve fibres.

A Cerebrum and cerebellum

B Two lobes of cerebellum

C Spinal cord with the brain

D Two cerebral hemispheres.



Question 2017

Chemical Coordination and Integration

The hormones involved in maintaining calcium balance in the human body are

A PTH and TCT

B PTH and LTH

C TCT and FSH

D MSH and ACTH

PTH - parathyroid horme — Hypercalceamic

TCT - Thyrocalcitonin

⇓

Hypocalceamic

Question

2018

Chemical Coordination and Integration

The hormones of "Fright, Fight and Flight" are

A Thyroxine and oxytocin

B Thyroxine and melatonin

C Adrenaline and noradrenaline ✓

D Gastrin and secretin

Emergency hormones

catecholamine

Question 2021

Chemical Coordination and Integration

Match the hormones of Column – I with its functions in Column – II

Column - I		Column - II	
A	Catecholamines (iv)	i	Diurnal rhythm (24-hour Rhythm)
B	MSH Melanocyte (iii)	ii	Immune response
C	Thymosin (Thymus) (ii)	iii	Pigmentation
D	Melatonin (pineal)	iv	Stress hormone

(A) A-iv, B-iii, C-ii, D-i ✓

(B) A-ii, B-iv, C-iii, D-i

(C) A-iii, B-ii, C-iv, D-i

(D) A-i, B-ii, C-iii, D-iv

Question 2020

Human Reproduction

Match the months listed in Column – I with the organogenesis of foetus in Column – II.

	Column I		Column II
A	First month (III)	I	Separation of eyelids,
B	Second month (IV)	II	Hairs on head, First foetal movement
C	Fifth month (II)	III	Heart is formed
D	Sixth month (I)	IV	Limbs and digits

A. A- (III), B - (IV), C - (II), D - (I)

B. A - (I), B - (IV), C - (I), D - (II)

C. A - (II), B - (III), C - (IV), D - (I)

D. A - (IV), B - (II), C - (III), D - (I)

Question

2020

Human Reproduction

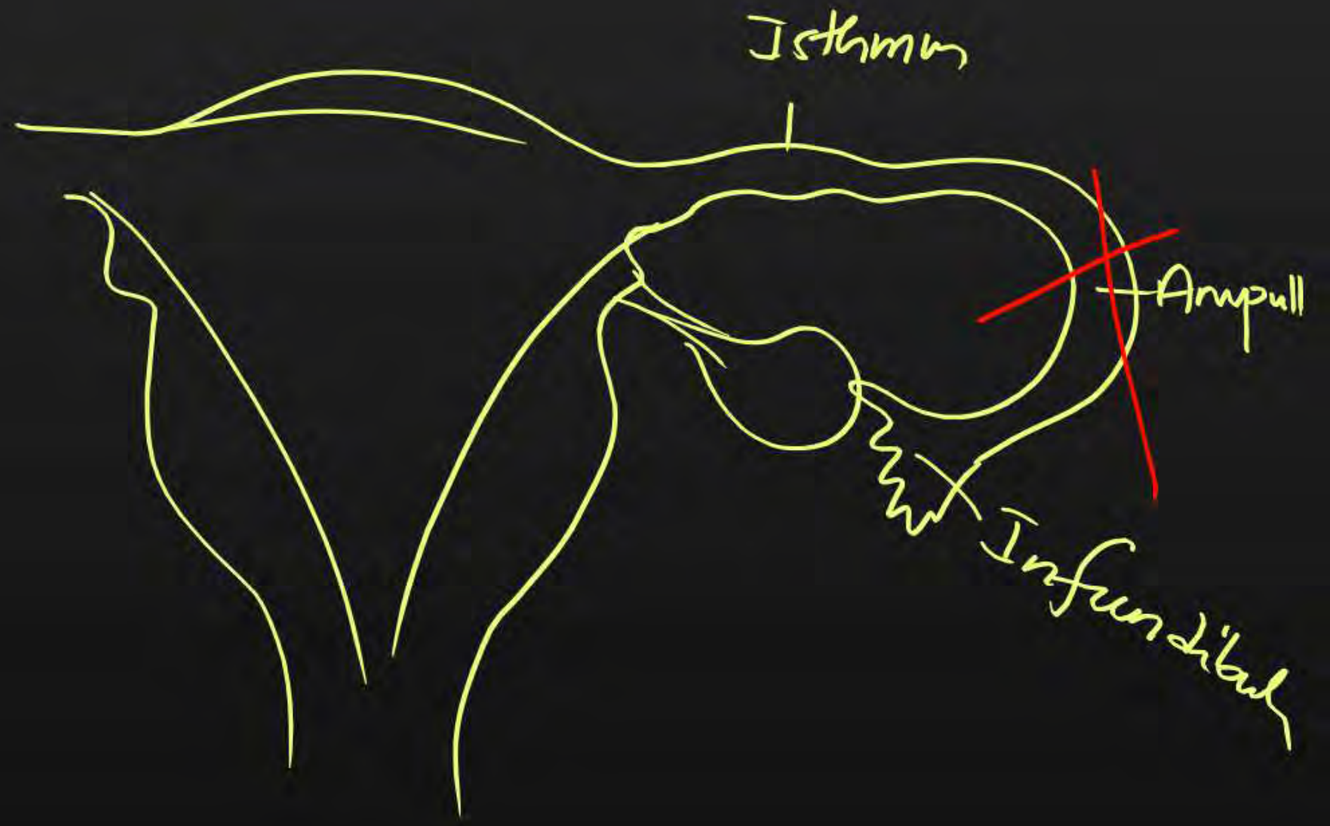
When the fallopian tube is blocked at ampullary region, the ovum fails to move from

A. Infundibulum to isthmus

B. Isthmus to infundibulum

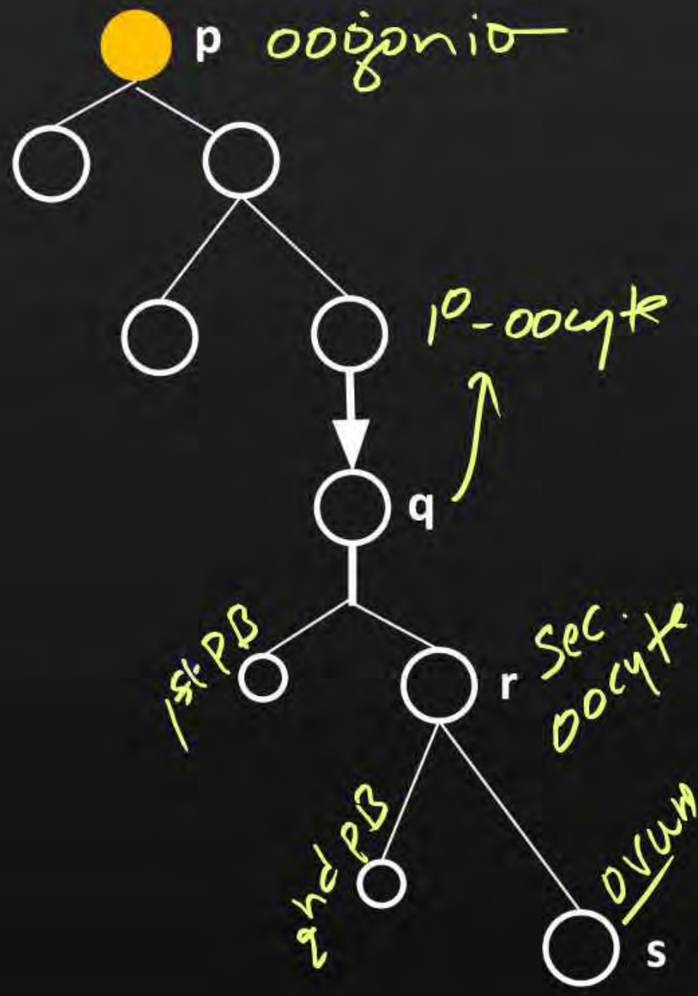
C. Ovary to ampulla

D. Isthmus to uterus



Question **2020** **Human Reproduction**

Identify the cells represented as p, q, r and s in the schematic representation of Oogenesis shown below and choose the correct option.



A. p-Oogonia, q-Primary oocyte, r-Secondary oocyte, s-Ovum

B. p-Ovum, q-Oogonia, r-Primary oocyte, s-Secondary oocyte

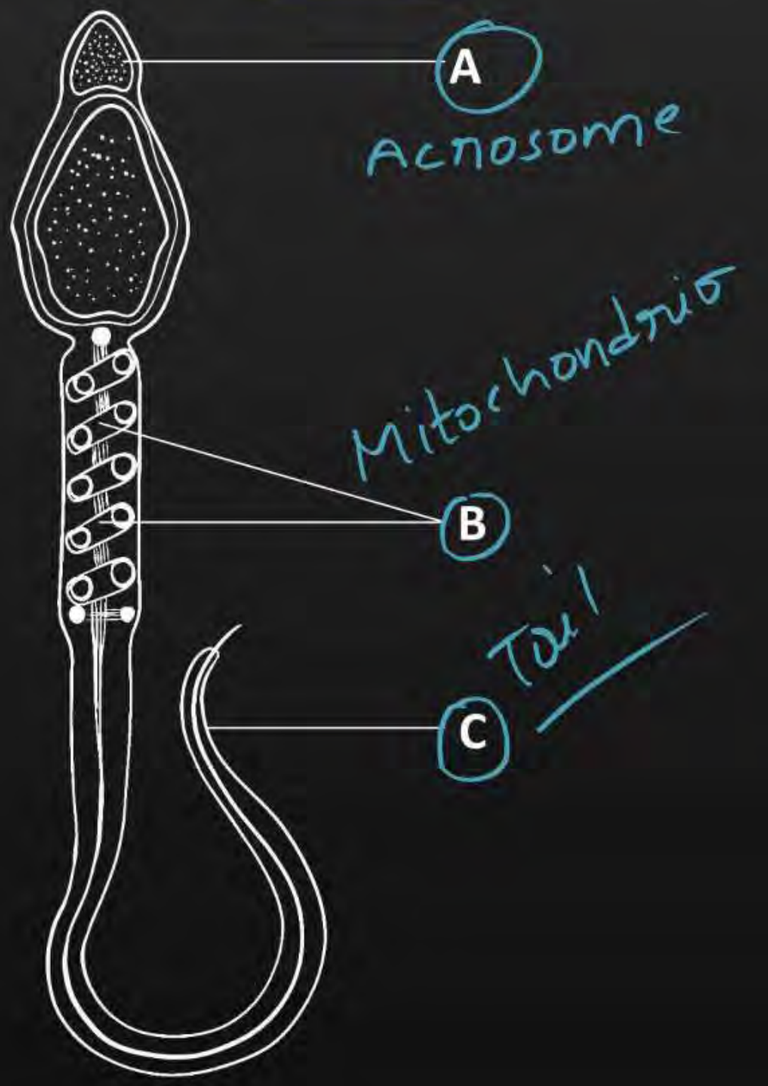
C. p-Secondary oocyte, q-Primary oocyte, r-Ovum, s-Oogonia

D. p-Ovum, q-Secondary oocyte, r-Primary oocyte, s-Ovum

Questio 2021

Human Reproduction

In the given diagram of human sperm, identify the functions of the labelled parts A, B and C.



A
A → Helps in penetration of sperm into ovum,
B → Helps in movement of sperm,
C → Provides energy for the movement of sperms into the female reproductive tract

B
A → Helps in penetration of sperm into ovum,
B → Provides energy for the movement of sperm,
C → Helps in movement of sperm.

C
A → Helps in movement of sperm,
B → Helps in penetration of sperm into ovum,
C → Provides energy for the movement of sperms

D
A → Provides energy for the movement of sperm,
B → Helps in movement of sperm,
C → Helps in penetration of sperm into ovum.

Question 2019

Reproductive Health

The method of natural contraception which requires correct knowledge of menstrual cycle is

A Periodic abstinence

B Lactational amenorrhoea

C IUDs-Intrauterine devices

D Coitus interrupts

couple avoid coitus blw 10-17 days of the menstrual

fertile period

Question 2019

Reproductive Health

A childless couple visit Assisted Reproductive Technologies (ARTS) centre to get assistance to have a child. On diagnosis, it was noticed that there was low sperm count in the male partner. Which of the following strategy of ART is most suitable in this case?

A. Gamete Intra-Fallopian Transfer (GIFT)

B. Artificial Insemination (AI)

C. Zygote Intra-Fallopian Transfer (ZIFT)

D. In vitro Fertilisation (IVF)

Question

2020

Reproductive Health

Which of the following contraceptives could be effective in avoiding pregnancy if used within 72 hours after casual unprotected intercourse?

A Progestogen - Estrogen combination

Emergency contraceptive

B Androgen - FSH combination ✗

C Testosterone - Relaxin combination ✗

D Relaxin - Oxytocin combination ✗

Question 2020

Reproductive Health

Choose the correct statement regarding the GIFT (Gamete Intrafallopian Tube Transfer) procedure.

A Ova are collected from a female donor and are transferred to the uterus of recipient.

B Ova collected from a female donor are transferred to the fallopian tube to facilitate zygote formation in the recipient.

C Zygote is collected from female donor and transferred to the fallopian tube of recipient.

D Zygote is collected from a female donor and transferred to the uterus of recipient.

Question 2017 Evolution

Which of the following is the identifiable character of Neanderthal man?

A Brain capacity 650 cc – 800 cc → H. habilis

B Developed pre-historic cave art → Hl. sapiens 18,000 yo

C Lived before 2 mya

D Buried their dead

Question 2017

Evolution

Identify the plants that are dominant during Jurassic period.

A Angiosperms and Bryophytes

B Sphenopsida and Ginkgo's

C Ferns, Conifers and Cycads

D Monocotyledons and Arborescent lycopods

Question **2019** Evolution

Bougainvillea **and** ***Cucurbita*****, the axillary bud is modified into thorn and tendril respectively. This is an example of**

support

protection

(A) Coevolution ✗

(B) Divergent evolution ✓

(C) Microevolution ✗

(D) Convergent evolution ✗

Functions are different.

Homologous

Question **2019** **Human Health and Diseases**

A man was suffering from mental illness like depression and insomnia. Identity the drug which is normally used as medicine in such cases.

A. Morphine ✗

B. Lysergic Acid Diethylamide (LSD)

C. Nicotine ✗

D. Heroin → slows down ✗

Benzodiazepine
Amphetamine
Barbiturates

Question 2019

Human Health and Diseases

Identify the enzyme that catalyses the step labelled as 'M' in the given schematic representation of replication of retrovirus.

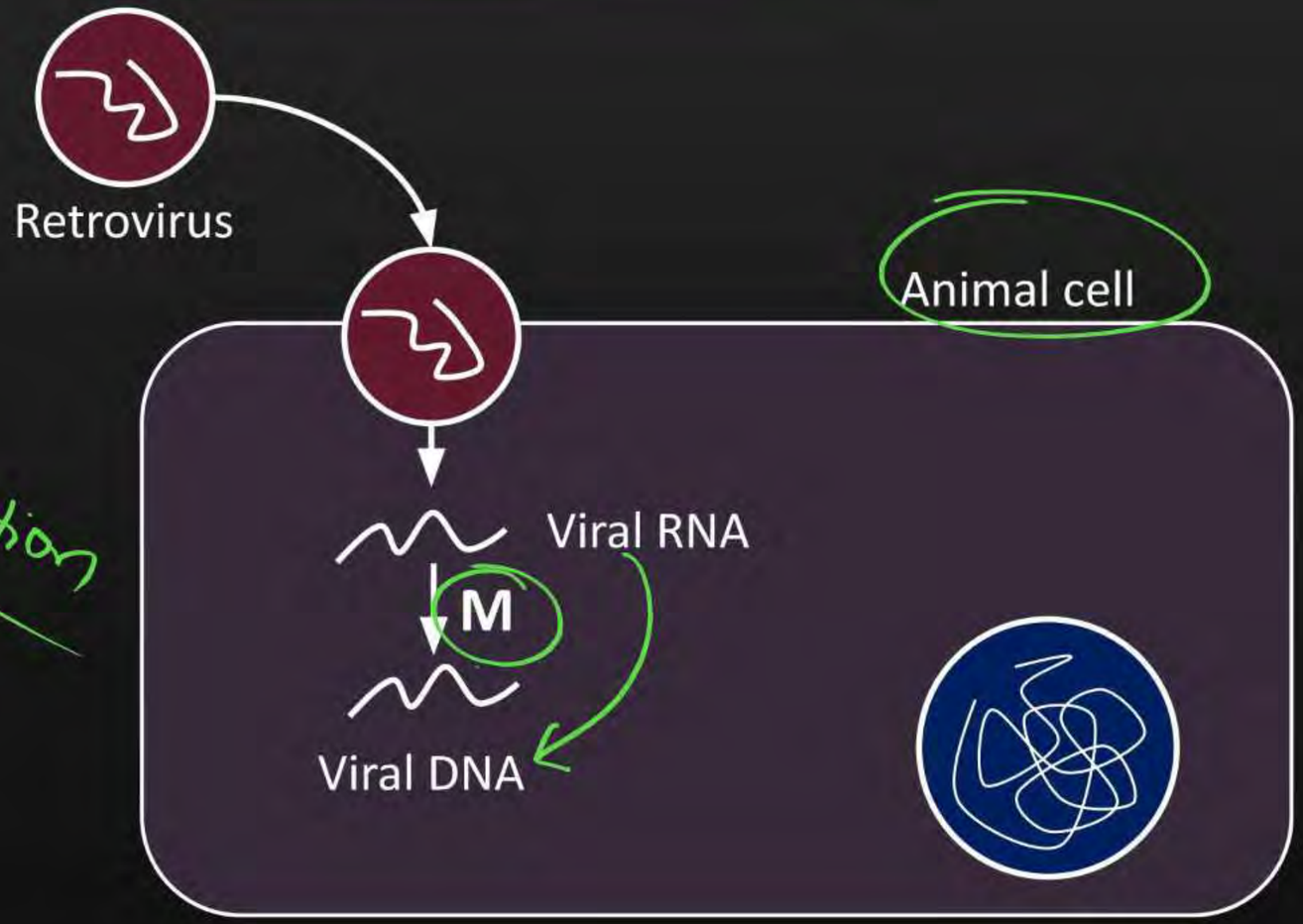
A. Reverse transcriptase

B. RNA polymerase

C. Recombinase

D. DNA ligase

Reverse transcription



Question 2020

Human Health and Diseases

In the life cycle of Plasmodium, fertilisation takes place in

→ Fusion of Gametocytes

A Liver cells ✗ Asexual

B Salivary glands of mosquito – stores the Sporozoites.

C RBCs of humans ✗ Asexual

D Stomach of mosquito ✓

Question 2021

Human Health and Diseases

The development of quick immune response in a person infected with deadly microbes by administering preformed antibodies is

passively

A. Active immunity

B. Cell-mediated immunity

C. Innate immunity

D. Passive immunisation

Question 2021

Human Health and Diseases

Identify the techniques useful in detecting the cancers of internal organs.

A CT

B MRI

C Radiology

D All of the above

3D-image

Radiography

Question 2022

Human Health and Diseases

One of the side-effect of the use of anabolic steroids in females

A Cirrhosis of liver

B Loss of memory

C Masculinisation

D Hallucination

Men-character.

Narcotic analgesics

Question 2019

Biotechnology: Principles and Processes

A student while extracting DNA from Aspergillus fungus requires _____ enzyme to break open the cell wall.

A Cellulase - plant

B Lysozyme - Bacterial

C Pectinase - plant

D Chitinase - Fungus

chitin

Question 2020

Biotechnology: Principles and Processes

From the given combinations of steps in PCR, identify the enzyme dependent step/s.

A Extension only

B Annealing and extension

C Annealing and denaturation

D Denaturation and extension

Taq polymerase

Denaturation

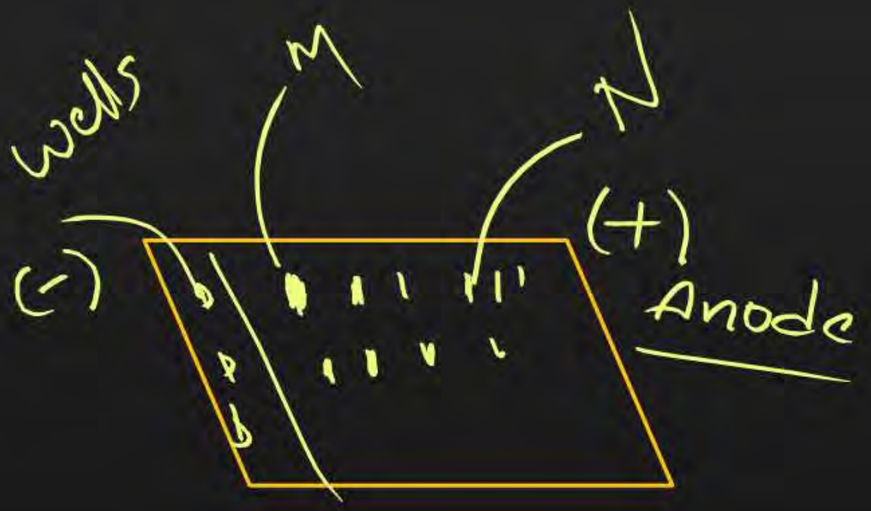
Annealing

Extension

Question 2020

Biotechnology: Principles and Processes

Identify the labels M and N in the following agarose gel electrophoresis representation.



A. M - Smallest DNA bands, N - Largest DNA bands

B. M - Digested DNA bands, N - Undigested DNA bands

C. M - Hybridised DNA bands, N – Unhybridised DNA

D. M- Largest DNA bands, N - Smallest DNA bands

Question 2020

Biotechnology: Principles and Processes

Suppose DNA samples collected for DNA fingerprinting analysis are less than the required quantity. Which of the following techniques is helpful to make the samples sufficient for above analysis?

Amplification of the sample

A. DNA probing ✗

B. Electrophoresis ✗

C. Chromatography ✗

D. PCR ✓

Question 2022

Biotechnology: Principles and Processes

What does the sample of given base sequence represent?

5'-GAATTC-3'

3'-CTTAAG-5'

A Completion of replication

B Initiator codon at 5' end

C Palindromic sequence

D Deletion mutation

Question 2022

Biotechnology: Principles and Processes

Gel electrophoresis is used for

A separation of DNA fragments according to their size → Seiving property of the matrix

B Construction of recombinant DNA by joining with cloning vectors

C Cutting of DNA into fragments

D Isolation of DNA molecule from the cells

Question 2019

Biotechnology and its Applications

Which of these is not an advantage in genetically modified crops?

A. Increases efficiency of material usage in plants

B. Reduces the reliance on chemical pesticides

C. Enhances the nutritional value of food

D. Increases the post-harvest losses

Question 2019

Biotechnology and its Applications

Some multinational companies have exploited the traditional knowledge of the indigenous people to produce commercially important bioproducts, without their consent. This is an example for

A Biopatent

B Bioprospecting

C Biopiracy

D Bioremediation

Question 2020

Biotechnology and its Applications

In RNA interference, the dsRNA molecule prevents _____.

RNAi

A. Aminoacylation ✗

B. Transcription of mRNA ✗

C. Transport of RNA from nucleus to cytoplasm

D. Translation of mRNA ✓

Question 2021

Biotechnology and its Applications

Taq polymerase that finds its application in PCR is obtained from

A. *Thermus aquaticus*

B. *Agrobacterium tumifaciens*

C. *Bacillus thuringiensis*

D. *Salmonella typhimurium*

Question 2021

Biotechnology and its Applications

Rapid antigen test and RT-PCR are the two-diagnosis test for Covid-19 virus. PCR, a molecular diagnostic tool, stands for

A Polymerase Chain Reaction

B Polymerase Chain Reagent

C Physiological Chain Reaction

D Physiological Chain Reagent

Question **2021**

Biotechnology and its Applications

α_1-antitrypsin is

produced by a transgenic sheep

A. An antacid ✗

B. An enzyme ✗

C. Used to treat emphysema ✓

D. Used to treat arthitis ✗

Question 2022

Biotechnology and its Applications

Cry IAC effectively controls

A. Root nematode

B. Cotton bollworms

C. Ringworm

D. Corn borer

Question 2022

Biotechnology and its Applications

ADA deficiency can be cured by

A. Kidney transplantation

B. Bone-marrow transplantation

C. Heart transplantation

D. Liver transplantation

Thank You