Biology

Daily Practice Paper #1 · NEET 2026 · Class 12

SolveFlow · Demo Paper

Field	Value
Subject	Biology
Total Questions	10
Total Marks	40
Negative Marking	−1 per wrong answer
Time Suggested	30 minutes
Syllabus	Class 12 — Reproduction, Genetics, Molecular Biology, Evolution, Ecology, Biotech

CO & Bloom's Level Mapping

Q No.	Topic	CO	Bloom's Level
1	Reproduction — Triple Fusion	CO1	L1 — Remember
2	Human Reproduction — Fertilization	CO1	L1 — Remember
3	Reproductive Health — Contraception	CO1	L2 — Understand
4	Molecular Biology — DNA Replication	CO2	L2 — Understand
5	Evolution — Natural Selection	CO3	L2 — Understand
6	Human Health — Malaria Vector	CO4	L1 — Remember
7	Food Production — Somatic Hybrid	CO4	L2 — Understand
8	Microbes — Saccharomyces	CO4	L1 — Remember
9	Biotechnology — Restriction Enzymes	CO5	L2 — Understand
10	Ecology — Energy Pyramid	CO5	L2 — Understand

Instructions

- Each question carries **4 marks** for a correct answer.
- -1 **mark** is deducted for each incorrect answer.
- No marks are deducted for unattempted questions.
- This paper covers both Botany and Zoology sections of NEET.
- All questions are based on NCERT Class 12 Biology syllabus.

Q1 | *Sexual Reproduction in Flowering Plants* Marks: 4 | CO/BL: CO1 / L1

In angiosperms, **triple fusion** results in the formation of:

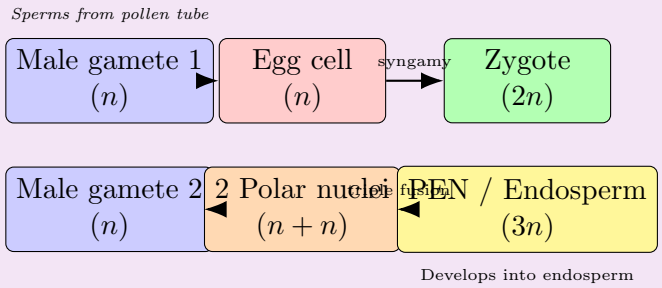
(A) Zygote

(B) Endosperm (Primary Endosperm Nucleus)

(C) Embryo

(D) Seed coat (testa)

Solution — Correct Answer: (B)



Triple fusion: male gamete (n) + 2 polar nuclei ($n+n$) → Primary Endosperm Nucleus ($3n$).
This is **double fertilisation** — unique to angiosperms.
Answer: (B) Endosperm (PEN, $3n$)

Key Point

Double fertilisation = syngamy (egg + sperm → zygote $2n$) + triple fusion (PEN $3n$). The endosperm nourishes the developing embryo.

Q2 | *Human Reproduction — Site of Fertilisation* Marks: 4 | CO/BL: CO1 / L1

The site of fertilisation in the female reproductive tract is:

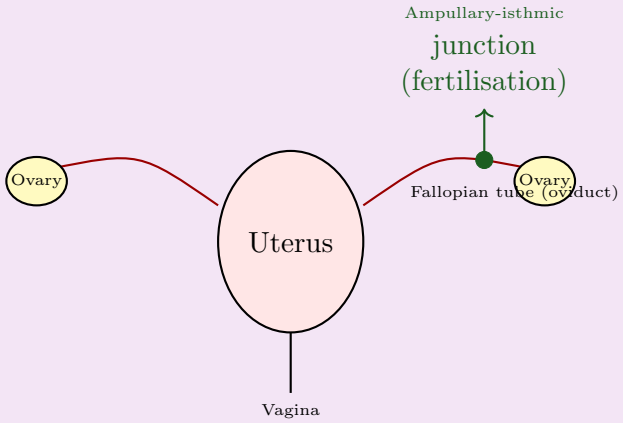
(A) Uterus

(B) Vagina

(C) Ampullary-isthmic junction of the Fallopian tube

(D) Ovary (follicle)

Solution — Correct Answer: (C)



Fertilisation occurs at the **ampullary-isthmic junction** of the oviduct. The zygote then undergoes cleavage and travels to the uterus for implantation (∼7 days post-fertilisation).
Answer: (C)

Key Point

Implantation site: endometrium of uterus. Fertilisation site: ampullary-isthmic junction. Sperm capacitation occurs in the female reproductive tract.

Q3 | *Reproductive Health — Contraception* Marks: 4 | CO/BL: CO1 / L2

Which contraceptive method provides protection against **both** pregnancy *and* sexually transmitted infections (STIs)?

(A) Oral contraceptive pills (OCPs)

(B) Intrauterine devices (IUDs)

(C) Condoms (male / female)

(D) Tubectomy (female sterilisation)

Solution — Correct Answer: (C)

Method	Prevents Pregnancy	Prevents STI
Oral pills (OCPs)	✓	×
IUD	✓	×
Condoms	✓	✓
Tubectomy	✓	×

Condoms are the *only* contraceptive that acts as a physical barrier against both sperm and pathogens (HIV, HSV, gonorrhoea, etc.). Answer: (C)

Key Point

REMEMBER for NEET: Condoms = only method that protects against STIs AND pregnancy. Intrauterine devices (Cu-T, LNG-IUS) — highly effective for pregnancy prevention only.

Q4 | *Molecular Biology — DNA Replication Enzymes* Marks: 4 | CO/BL: CO2 / L2

The enzyme that **removes RNA primers** and **fills the gap** with DNA during replication is:

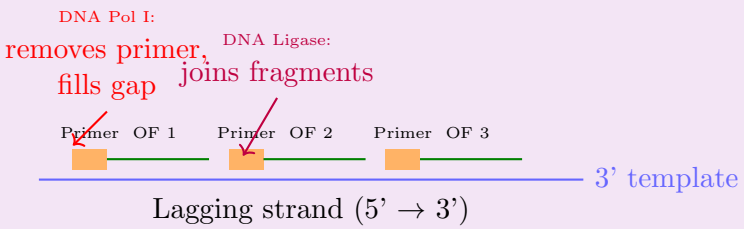
(A) DNA Polymerase III

(B) DNA Polymerase I

(C) DNA Ligase

(D) Primase

Solution — Correct Answer: (B)



Enzyme	Function
Helicase	Unwinds and separates DNA strands
Primase	Synthesises short RNA primers
DNA Pol III	Main replicating enzyme — extends from primer
DNA Pol I	**Removes RNA primer, fills gap with DNA**
DNA Ligase	Joins Okazaki fragments (seals nicks)

Answer: (B) DNA Polymerase I

Key Point

DNA Pol I has **dual activity**: 5'→3' exonuclease (removes RNA primer) *and* 5'→3' polymerase (fills the gap with DNA). DNA Ligase then seals the nick.

Q5 | *Evolution — Industrial Melanism* Marks: 4 | CO/BL: CO3 / L2

Industrial melanism in *Biston betularia* (peppered moth) is a classic example of:

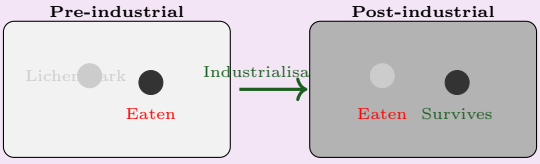
(A) Natural selection

(B) Genetic drift

(C) Mutation pressure

(D) Founder effect

Solution — Correct Answer: (A)



Industrial pollution darkened tree bark; dark (melanic) moths gained a survival advantage through **natural selection**. Light moths became more visible to predators. This is **directional selection** — allele frequency shifts toward darker phenotype.
Answer: (A) Natural Selection

Key Point

H.B.D. Kettlewell (1950s) documented this as direct evidence for Darwinian natural selection. After the Clean Air Act, light moths recovered — showing selection is reversible.

Q6 | *Human Health & Disease — Malaria Vector* Marks: 4 | CO/BL: CO4 / L1

Plasmodium falciparum (malaria parasite) is transmitted by:

(A) Male *Anopheles* mosquito

(B) Female *Anopheles* mosquito

(C) Female *Culex* mosquito

(D) *Aedes aegypti* mosquito

Solution — Correct Answer: (B)

Disease	Pathogen	Vector
Malaria	*Plasmodium* spp.	**Female *Anopheles***
Filariasis (elephantiasis)	*Wuchereria*	Female *Culex*
Dengue / Chikungunya	Flavivirus / Alphavirus	*Aedes aegypti*
Yellow fever	Flavivirus	*Aedes aegypti*

The **female** mosquito requires a blood meal for egg maturation — hence only females transmit vector-borne diseases. Answer: (B) Female *Anopheles*

Key Point

Malaria life cycle key stages: **Liver** (exo-erythrocytic) → **RBC** (erythrocytic, fever stage) → **Mosquito** (sexual stage, sporogony).

Q7 | *Food Production — Somatic Hybridisation* Marks: 4 | CO/BL: CO4 / L2

Somatic hybridisation involves:

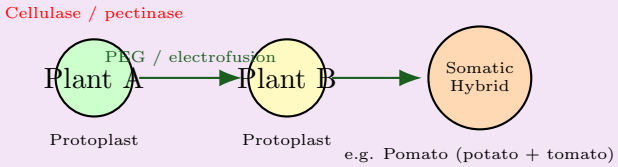
(A) Fusion of two gametes from different plant species

(B) Fusion of protoplasts from two different plant species

(C) Crossing two inbred lines to produce a hybrid

(D) Insertion of a foreign gene into a plant genome

Solution — Correct Answer: (B)



Somatic hybridisation = fusion of **protoplasts** (cells with cell walls removed by cellulase/pectinase) from two different plant species, bypassing sexual incompatibility barriers.
Answer: (B)

Key Point

Famous example: **Pomato** = potato (*Solanum tuberosum*) + tomato (*Solanum lycopersicum*). The hybrid was created but proved commercially non-viable (poor tubers AND poor fruits).

Q8 | *Microbes in Human Welfare* — *Yeast*Marks: 4 | CO/BL: CO4 / L1

Saccharomyces cerevisiae is used industrially in the production of:

(A) Penicillin (antibiotic)

(B) Biogas (methane)

(C) Ethanol and for leavening bread

(D) Curd / yoghurt

Solution — Correct Answer: (C)

Microbe	Product	Use
S. cerevisiae	**Ethanol, CO_2**	**Brewing, baking**
Penicillium notatum	Penicillin	Antibiotic
Methanobacterium	Methane	Biogas
Lactobacillus	Lactic acid	Curd / yoghurt
Aspergillus niger	Citric acid	Food industry

Fermentation: $C_6H_{12}O_6 \longrightarrow 2\,C_2H_5OH + 2\,CO_2$ (anaerobic). CO_2 causes bread to rise. Answer: (C)

Key Point

S. cerevisiae = baker's yeast AND brewer's yeast. It is also used to produce insulin (recombinant), hepatitis B vaccine, and as a model organism in cell biology.

Q9 | *Biotechnology — Restriction Enzymes* Marks: 4 | CO/BL: CO5 / L2

Restriction enzymes cut DNA at specific sequences called:

(A) Promoter sequences

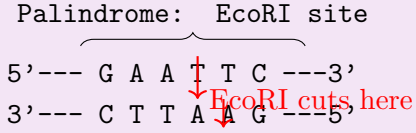
(B) Palindromic recognition sequences

(C) Satellite (repetitive) sequences

(D) Telomeric sequences

Solution — Correct Answer: (B)

A **palindromic sequence** reads the same on both strands in the 5'→3' direction:



EcoRI recognition site: 5'-GAATTC-3' / 3'-CTTAAG-5'. Cuts between G and A on both strands → produces **sticky ends**. Answer: (B) Palindromic recognition sequences

Key Point

Types of ends after restriction digestion: **Sticky ends** (staggered cuts, e.g. EcoRI, BamHI) — preferred for cloning. **Blunt ends** (straight cuts, e.g. SmaI) — harder to ligate efficiently.

Q10 | *Ecosystem — Energy Pyramid* Marks: 4 | CO/BL: CO5 / L2

The pyramid of energy in an ecosystem is **always**:

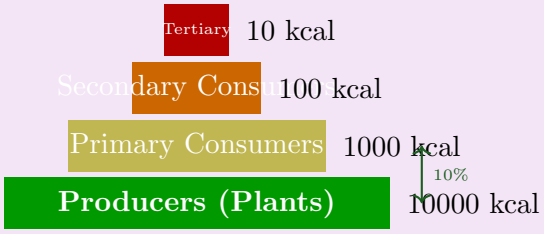
(A) Inverted

(B) Upright (erect)

(C) Spindle-shaped

(D) Can be inverted in aquatic ecosystems

Solution — Correct Answer: (B)



Only ∼10% of energy is transferred to the next trophic level (Lindemann's 10% law). The pyramid of energy is **always upright** — energy always decreases up the trophic levels. Unlike biomass or numbers pyramids, the *energy pyramid can never be inverted.*

Answer: (B) Always upright

Key Point

Pyramid comparison (NEET): Numbers pyramid — can be inverted (e.g. one tree, many insects). Biomass pyramid — can be inverted (aquatic: phytoplankton < zooplankton biomass at a moment). Energy pyramid — **ALWAYS upright, no exception**.