

NEST Biology Sample Paper – 10

Duration: 45 Minutes

Maximum Marks: 60

Instructions

- This paper contains **20 Multiple Choice Questions (single correct answer)**, modelled on the Biology section of **NEST 2026**.
- Each correct answer carries **+3 marks**. There is a deduction of **–1 mark** for each incorrect answer; **no marks** are deducted for an unattempted question.
- Every question has exactly **four options**, of which only **one** is correct. Choose carefully.
- Personal calculators, log tables, mobile phones, and other electronic gadgets are strictly prohibited in the examination hall.
- A simple on-screen (virtual) calculator is provided in the computer-based test interface and may be used; blank sheets for rough work are supplied at the exam centre.

Q1. The rules of binomial nomenclature require that the genus name begin with a capital letter, the species name be written in lower case, and the full name be printed in italics (or underlined when handwritten). Which of the following is the *correctly* written scientific name of the mango?

- (A) *mangifera Indica*
- (B) *Mangifera indica*
- (C) *MANGIFERA INDICA*
- (D) *Mangifera Indica*

Q2. A student compares two land plants: in plant **X** the green, leafy, photosynthetic body that we see is the gametophyte and it lacks true vascular tissue, whereas in plant **Y** the conspicuous body is the sporophyte and it possesses xylem and phloem. Plants **X** and **Y** respectively are best represented by

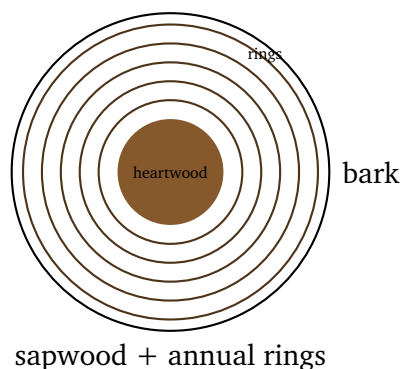


- (A) a moss (bryophyte) and a fern (pteridophyte)
- (B) a fern (pteridophyte) and a moss (bryophyte)
- (C) a liverwort and *Marchantia*, both bryophytes
- (D) a pine and a *Cycas*, both gymnosperms

Q3. A maize grain stores its food reserves in a special tissue that remains in the mature seed and is digested during germination, while a pea seed stores its food in two fleshy cotyledons and retains no such tissue at maturity. The maize and pea seeds are respectively

- (A) non-endospermic dicot and endospermic monocot
- (B) both endospermic monocots
- (C) non-endospermic monocot and endospermic dicot
- (D) endospermic monocot and non-endospermic dicot

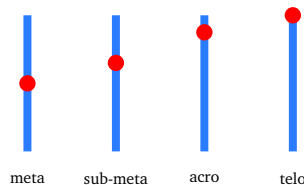
Q4. The cross-section of an old dicot tree trunk shown below has a dark, dead, non-conducting central wood and a lighter, living, water-conducting outer wood, with concentric rings produced by the seasonal activity of the vascular cambium. The dark central region and the alternating rings are respectively



- (A) sapwood and medullary rays
- (B) heartwood and annual (growth) rings
- (C) cork and lenticels
- (D) pith and secondary phloem



- Q5.** The four chromosomes drawn below differ in the position of the centromere (shown as a small disc). A chromosome whose centromere lies very close to one end, giving one extremely short arm and one very long arm, is called



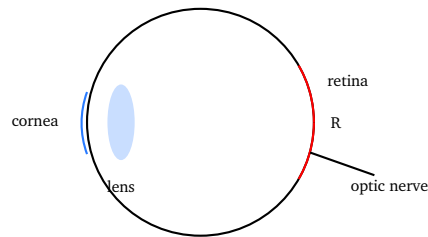
- (A) metacentric
(B) submetacentric
(C) acrocentric
(D) telocentric
- Q6.** Polysaccharides differ in their monomer and biological role. Consider the matches below for the stored or structural polysaccharides of living organisms. Which single matching is *entirely* correct?
- (A) Glycogen — branched glucose polymer, storage form in animals and fungi
(B) Cellulose — branched glucose polymer, food store in plants
(C) Starch — nitrogen-containing polymer of the fungal cell wall
(D) Chitin — unbranched glucose polymer, structural in plant cell walls
- Q7.** In the eukaryotic cell cycle, the phase in which DNA is replicated lies between two gap phases, while some specialised cells exit the cycle and stop dividing for long periods. The DNA-synthesis phase and the non-dividing quiescent stage are respectively
- (A) the M phase and the G_1 phase
(B) the G_2 phase and the S phase
(C) the G_1 phase and the M phase
(D) the S phase and the G_0 phase



- Q8.** In a classic experiment a green alga was illuminated with light split into its spectral colours, and aerobic bacteria (used to detect oxygen) accumulated mainly in the blue and red regions of the spectrum, showing where photosynthesis was most active. This experiment, which helped define the action spectrum of photosynthesis, was performed by
- (A) Joseph Priestley, using a candle and a mint plant
 - (B) Ruben and Kamen, using heavy isotopes of oxygen
 - (C) T. W. Engelmann, using a prism and aerobic bacteria
 - (D) Melvin Calvin, using radioactive carbon
- Q9.** When the length of a plant organ is plotted against time, the curve is sigmoid: growth is slow at first, then rapid, and finally slows and levels off. The slow initial period, the rapid middle period and the final levelling period are respectively the
- (A) log phase, lag phase and stationary phase
 - (B) lag phase, log (exponential) phase and stationary phase
 - (C) stationary phase, lag phase and log phase
 - (D) exponential phase, arithmetic phase and senescent phase
- Q10.** The rhythm of human breathing is set by a respiratory centre, and breathing rate is adjusted mainly in response to the level of one chemical signal in the blood. The location of the principal respiratory rhythm centre and the chief chemical stimulus that increases the rate of breathing are respectively
- (A) the medulla oblongata and a rise in carbon dioxide (CO_2/H^+)
 - (B) the cerebrum and a fall in oxygen alone
 - (C) the cerebellum and a rise in blood glucose
 - (D) the hypothalamus and a rise in blood oxygen
- Q11.** In the diagram of the human eye below, light is refracted by the transparent front (cornea) and the lens to form an image on the inner light-



sensitive layer marked **R**, which contains the photoreceptor rods and cones. Layer **R** is the



- (A) the sclera
- (B) the choroid
- (C) the retina
- (D) the iris

Q12. To make a controlled cross between two selected plants, a breeder removes the anthers from the unopened flower buds of the female parent and then covers these flowers with a bag. The removal of anthers and the bagging of flowers are carried out respectively to

- (A) supply extra pollen, and to keep the flowers warm
- (B) prevent self-pollination, and to protect the stigma from unwanted (foreign) pollen
- (C) induce mutations, and to slow down transpiration
- (D) trigger fertilisation, and to attract more insects

Q13. After fertilisation in humans, the zygote undergoes a series of mitotic divisions without overall growth, forming a solid ball of cells, which then becomes a hollow ball that finally embeds itself in the uterine wall. The solid ball, the hollow ball and the embedding event are respectively

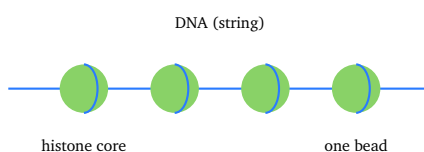
- (A) blastocyst, morula and gastrulation
- (B) gastrula, morula and ovulation
- (C) morula, gastrula and fertilisation
- (D) morula, blastocyst and implantation



Q14. In sweet pea, flower colour needs two dominant genes **C** and **P**; a plant must carry at least one dominant allele of *both* genes to be coloured, and any plant lacking either is white. When two coloured plants of genotype CcPp are crossed, the expected ratio of coloured to white plants in the offspring is

- (A) 9 coloured : 7 white
- (B) 9 : 3 : 3 : 1
- (C) 3 coloured : 1 white
- (D) 12 coloured : 3 : 1

Q15. The diagram below shows the first level of DNA packaging in a eukaryotic nucleus, in which the negatively charged DNA wraps around bead-like cores giving a "beads-on-a-string" appearance. Each bead-like repeating unit, made of DNA wound around a core of eight histone proteins, is called a



- (A) a centromere
 - (B) a chromatid
 - (C) a nucleosome
 - (D) a chromomere ribosome
- Q16.** The forelimbs of a whale, a bat and a human have very different functions (swimming, flying and grasping) but share the same basic arrangement of bones, because they were inherited from a common ancestor. Such structures are an example of
- (A) analogous organs that show convergent evolution
 - (B) vestigial organs that have lost their function
 - (C) organs produced by use and disuse within a lifetime



(D) homologous organs that show divergent evolution

Q17. Among the five classes of human immunoglobulins, one class is by far the most abundant antibody in blood serum, is the only one that crosses the placenta, and provides long-term protection after infection or vaccination. This class of antibody is

(A) IgE

(B) IgG

(C) IgM

(D) IgA

Q18. In industrial microbiology, certain microbes are used to manufacture organic acids in bulk. The microorganisms most commonly used to produce citric acid and acetic acid on an industrial scale are respectively

(A) *Aspergillus niger* (citric acid) and *Acetobacter aceti* (acetic acid)

(B) *Lactobacillus* (citric acid) and *Saccharomyces* (acetic acid)

(C) *Clostridium butylicum* (citric acid) and *Penicillium* (acetic acid)

(D) *Acetobacter aceti* (citric acid) and *Aspergillus niger* (acetic acid)

Q19. The use of bio-resources and traditional knowledge of a community by other nations or organisations, without proper authorisation or benefit-sharing, is a major bioethics concern. The term for such unauthorised exploitation, and the national authority in India that decides on the validity and safety of releasing genetically modified organisms, are respectively

(A) bioremediation and the WTO

(B) biofortification and the FDA

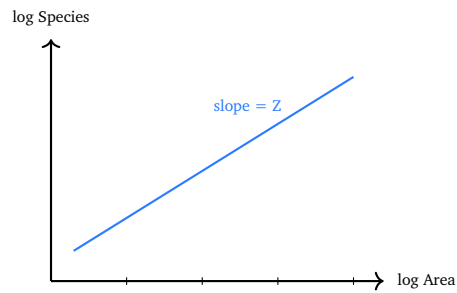
(C) biopiracy and the GEAC

(D) biomagnification and the IUCN

Q20. The graph below plots species richness against the area sampled (on logarithmic axes). The relationship is described by $\log S = \log C + Z \log A$,



where the slope Z of the straight line is the



- (A) carrying capacity of the habitat
- (B) regression coefficient (the species–area slope, Z)
- (C) intrinsic rate of natural increase
- (D) base of the natural logarithm



Detailed Solutions

Q1.

Solution

Concept — Binomial nomenclature: Each species has a two-word Latinised name. The first word (genus) starts with a capital letter, the second word (species) is in lower case, and the whole name is printed in italics (or underlined when written by hand).

Step 1 — Apply the rules: *Mangifera indica* has a capitalised genus, lower-case species and is italicised — all rules satisfied.

Why other options are wrong:

- (A) Genus must be capitalised; *mangifera* is wrong and *Indica* should be lower case.
- (C) Names are not written in all capitals.
- (D) The species epithet *Indica* must be lower case, not capitalised.

Final Answer: The correct name is *Mangifera indica* ⇒

Answer: (B) [Go Back to Q1](#)

Q2.

Solution

Concept — Bryophyte vs pteridophyte life cycle: In bryophytes (mosses) the dominant, photosynthetic, free-living plant body is the haploid gametophyte, and it lacks true vascular tissue. In pteridophytes (ferns) the dominant body is the diploid sporophyte, which has well-developed xylem and phloem.

Step 1 — Match X and Y: X (leafy gametophyte, no vascular tissue) = moss (bryophyte); Y (dominant sporophyte with vascular tissue) = fern (pteridophyte).

Why other options are wrong:

- (B) Reverses the two: in the moss the gametophyte dominates, in the fern the sporophyte dominates.
- (C) Both named plants are bryophytes, so neither has the dominant vascular sporophyte described for Y.
- (D) Gymnosperms are seed plants with a sporophyte body; neither has a free-living dominant gametophyte like X.

Final Answer: X = moss, Y = fern ⇒



Answer: (A) [Go Back to Q2](#)

Q3.

Solution

Concept — Seed structure: In endospermic (albuminous) seeds, food is stored in the endosperm, which persists in the mature seed (e.g. maize, a monocot). In non-endospermic (exalbuminous) seeds the endosperm is consumed during development and food is stored in fleshy cotyledons (e.g. pea, a dicot).

Step 1 — Classify each seed: Maize stores food in a persistent endosperm \Rightarrow endospermic monocot. Pea stores food in cotyledons, no endosperm at maturity \Rightarrow non-endospermic dicot.

Why other options are wrong:

- (A) Reverses both the food-store type and the monocot/dicot status.
- (B) Pea is a dicot and is non-endospermic, not an endospermic monocot.
- (C) Maize is endospermic, not non-endospermic; pea is non-endospermic, not endospermic.

Final Answer: Maize = endospermic monocot, pea = non-endospermic dicot \Rightarrow **D**

Answer: (D) [Go Back to Q3](#)

Q4.

Solution

Concept — Secondary growth in a dicot stem: The vascular cambium produces secondary xylem each year. Faster spring wood and slower autumn wood together form one annual (growth) ring. The older central wood becomes hard, dark, dead and non-conducting (heartwood), while the outer lighter wood (sapwood) still conducts water.

Step 1 — Read the figure: The dark dead central wood = heartwood; the concentric rings produced by seasonal cambial activity = annual (growth) rings.

Why other options are wrong:

- (A) Sapwood is the lighter outer wood, not the dark centre; medullary rays are radial, not concentric rings.
- (C) Cork and lenticels are bark features formed by the cork cambium, not the central wood.



- (D) Pith is the small central ground tissue, not dead secondary wood; secondary phloem lies outside the cambium.

Final Answer: Dark centre = heartwood; rings = annual growth rings ⇒

Answer: [Go Back to Q4](#)

Q5.

Solution

Concept — Chromosome types by centromere position: Chromosomes are classified by where the centromere lies. Metacentric (middle, equal arms), submetacentric (slightly off-centre, unequal arms), acrocentric (near one end, one very short arm) and telocentric (terminal, only one arm).

Step 1 — Match the description: A centromere very close to one end giving one extremely short arm and one very long arm describes an acrocentric chromosome.

Why other options are wrong:

- (A) Metacentric has the centromere in the middle with two equal arms.
- (B) Submetacentric has the centromere only slightly off the centre, giving moderately unequal arms.
- (D) Telocentric has a strictly terminal centromere with essentially a single arm (not found in normal human chromosomes).

Final Answer: Centromere near one end = acrocentric ⇒

Answer: [Go Back to Q5](#)

Q6.

Solution

Concept — Polysaccharides: Starch (amylose + amylopectin) is the plant storage glucan; glycogen is the highly branched glucose store of animals and fungi; cellulose is an unbranched glucose polymer of plant cell walls; chitin is a nitrogen-containing polymer of the fungal cell wall and arthropod exoskeleton.

Step 1 — Test each match: Only "Glycogen — branched glucose polymer, storage in animals and fungi" is correct on both structure and function.

Why other options are wrong:

- (B) Cellulose is an *unbranched* structural glucan, not a branched food store.



- (C) Starch is a glucose storage polymer of plants, not a nitrogen-containing fungal-wall polymer.
- (D) Chitin is a nitrogen-containing structural polymer (fungal walls/arthropods), not an unbranched glucan of plant walls.

Final Answer: The fully correct match is glycogen \Rightarrow

[Go Back to Q6](#)

Q7.

Solution

Concept — Interphase and G_0 : Interphase has three sub-phases: G_1 (growth), S (DNA synthesis/replication) and G_2 (growth before mitosis). Some differentiated cells exit the cycle into a non-dividing quiescent stage called G_0 . Checkpoints (e.g. at G_1/S and G_2/M) monitor readiness to proceed.

Step 1 — Identify the phases: DNA replication occurs in the S phase; the long-term non-dividing quiescent stage is G_0 .

Why other options are wrong:

- (A) M phase is mitosis (division), not DNA synthesis; G_1 is an active gap phase, not the quiescent exit.
- (B) G_2 is the post-replication gap, not the DNA-synthesis phase.
- (C) G_1 is a gap phase, not the S phase; M phase is active division, not quiescence.

Final Answer: S phase (replication) and G_0 (quiescent) \Rightarrow

[Go Back to Q7](#)

Q8.

Solution

Concept — Engelmann's experiment: T. W. Engelmann split light with a prism onto a filamentous green alga and used aerobic (oxygen-seeking) bacteria as an indicator. The bacteria gathered where oxygen (hence photosynthesis) was greatest, in the blue and red regions, giving the first action spectrum of photosynthesis.

Step 1 — Match the design: Prism + alga + aerobic bacteria detecting O_2 in blue and red = Engelmann's action-spectrum experiment.

Why other options are wrong:



- (A) Priestley's candle-and-mint experiment showed plants restore "injured" air; it did not produce an action spectrum.
- (B) Ruben and Kamen used ^{18}O to prove O_2 comes from water, not to map the spectrum with bacteria.
- (D) Calvin used ^{14}C to trace the dark-reaction (carbon-fixation) pathway, not the action spectrum.

Final Answer: The experiment was Engelmann's \Rightarrow

[Go Back to Q8](#)

Q9.

Solution

Concept — Phases of plant growth: A growth curve is sigmoid (S-shaped) with three phases: a lag phase (slow initial growth), a log or exponential phase (rapid growth), and a stationary phase (growth slows and levels off as resources become limiting).

Step 1 — Map the curve: Slow start = lag, rapid middle = log (exponential), final levelling = stationary.

Why other options are wrong:

- (A) Lists the phases in the wrong order (log before lag).
- (C) Begins with the stationary phase, which is actually the last phase.
- (D) "Arithmetic" and "senescent" are not the standard names for the three phases of the sigmoid growth curve.

Final Answer: Lag, log (exponential), stationary \Rightarrow

[Go Back to Q9](#)

Q10.

Solution

Concept — Regulation of breathing: The respiratory rhythm centre is located in the medulla oblongata. A rise in CO_2 (and the resulting H^+ /fall in pH) is the chief chemical stimulus sensed by chemoreceptors; it increases the rate and depth of breathing.

Step 1 — Identify centre and stimulus: Rhythm centre = medulla oblongata; main chemical driver = increased CO_2/H^+ .



Why other options are wrong:

- (B) The cerebrum allows voluntary control but is not the rhythm centre; a fall in O_2 alone is a much weaker stimulus than CO_2 .
- (C) The cerebellum coordinates movement; blood glucose does not regulate breathing rate.
- (D) The hypothalamus regulates homeostasis broadly; a rise in O_2 does not stimulate faster breathing.

Final Answer: Medulla oblongata and a rise in $CO_2 \Rightarrow$

Answer: (A) [Go Back to Q10](#)

Q11.

Solution

Concept — The human eye and vision: Light passes through the cornea and lens and is focused onto the retina, the innermost light-sensitive layer. The retina holds the photoreceptors: rods (dim-light, contain rhodopsin) and cones (colour and bright light). Signals leave through the optic nerve.

Step 1 — Identify R: The inner layer bearing rods and cones, on which the image forms, is the retina.

Why other options are wrong:

- (A) The sclera is the tough outer protective coat; it has no photoreceptors.
- (B) The choroid is the middle vascular, pigmented layer that nourishes the eye; it does not form the image.
- (D) The iris is the coloured diaphragm that controls pupil size, not the image-receiving layer.

Final Answer: Layer R is the retina \Rightarrow

Answer: (C) [Go Back to Q11](#)



Q12.

Solution

Concept — Artificial hybridisation: To cross two chosen parents, the breeder removes the anthers from the bud of the female (bisexual) parent before they dehisce. This is emasculation, and it prevents self-pollination. The emasculated flower is then bagged to protect its stigma from unwanted foreign pollen until the desired pollen is applied.

Step 1 — Assign the purposes: Anther removal = prevent self-pollination; bagging = protect stigma from contaminating pollen.

Why other options are wrong:

- (A) Emasculation removes (it does not supply) pollen; bagging is not for warmth.
- (C) Emasculation does not induce mutations, and bagging is not for transpiration control.
- (D) Anther removal does not trigger fertilisation, and bagging keeps insects (and their pollen) out, not attracts them.

Final Answer: Prevent selfing, and protect the stigma from foreign pollen ⇒

[Go Back to Q12](#)

Q13.

Solution

Concept — Early human development: The zygote undergoes cleavage (mitoses without growth) to form a solid ball of 8–16 cells, the morula. Continued division and fluid accumulation convert it into a hollow blastocyst, which then embeds in the uterine endometrium, an event called implantation.

Step 1 — Order the events: Solid ball = morula; hollow ball = blastocyst; embedding in uterine wall = implantation.

Why other options are wrong:

- (A) Reverses morula and blastocyst, and gastrulation is later germ-layer formation, not embedding.
- (B) The solid ball is the morula, not a gastrula; ovulation is egg release, not embedding.
- (C) The hollow ball is the blastocyst, not a gastrula; fertilisation is the initial fusion, not embedding.



Final Answer: Morula, blastocyst and implantation \Rightarrow

Answer: (D) [Go Back to Q13](#)

Q14.

Solution

Concept — Complementary gene interaction (epistasis): Here colour needs at least one dominant allele of *both* genes (C_P_). A CcPp \times CcPp cross gives the standard 9:3:3:1 genotype groups, but only the 9 (C_P_) are coloured; the 3 (C_pp), 3 (ccP_) and 1 (ccpp) are all white. So 9 coloured : (3+3+1) = 7 white.

Step 1 — Combine the white classes: 3 + 3 + 1 = 7 white; coloured stays 9. Ratio = 9 : 7.

Why other options are wrong:

- (B) 9:3:3:1 is the ratio with no gene interaction (four distinct phenotypes), not this complementary case.
- (C) 3:1 is a monohybrid ratio, not a two-gene interaction.
- (D) 12:3:1 is dominant epistasis, a different modification, not complementary gene action.

Final Answer: The ratio is 9 coloured : 7 white \Rightarrow

Answer: (A) [Go Back to Q14](#)

Q15.

Solution

Concept — DNA packaging (nucleosome): The first level of DNA packaging is the nucleosome: about 200 bp of DNA wrapped around a histone octamer (two copies each of H2A, H2B, H3, H4). A chain of nucleosomes gives the "beads-on-a-string" appearance, which then coils into chromatin and finally a chromosome.

Step 1 — Identify the bead: DNA wound around a core of eight histones = one nucleosome.

Why other options are wrong:

- (A) The centromere is the constricted region where sister chromatids join, not the repeating bead.
- (B) A chromatid is one full longitudinal copy of a duplicated chromosome, far larger than a bead.



- (D) "Chromomere ribosome" is not a real packaging unit; ribosomes are protein-synthesis machines.

Final Answer: The bead-like repeating unit is the nucleosome ⇒

Answer: (C) [Go Back to Q15](#)

Q16.

Solution

Concept — Homology and divergent evolution: Homologous organs share a common basic structure and ancestry but may perform different functions. Their different functions evolving from a common plan is divergent (adaptive) evolution. (Analogous organs, by contrast, have different structure but similar function and reflect convergent evolution.)

Step 1 — Classify the forelimbs: Same bone plan, different functions, common ancestor = homologous organs showing divergent evolution.

Why other options are wrong:

- (A) Analogous/convergent applies to different structures with similar function (e.g. wings of insects and birds), not same-plan limbs.
- (B) These limbs are fully functional, so they are not vestigial organs.
- (C) Inheritance of characters by use and disuse is Lamarckism, not what shared ancestry demonstrates.

Final Answer: They are homologous organs (divergent evolution) ⇒

Answer: (D) [Go Back to Q16](#)

Q17.

Solution

Concept — Immunoglobulin classes: The five classes are IgG, IgA, IgM, IgE and IgD. IgG is the most abundant antibody in serum, is the only class that crosses the placenta to protect the foetus, and provides lasting secondary-response immunity.

Step 1 — Match the description: Most abundant + placenta-crossing + long-term protection = IgG.

Why other options are wrong:

- (A) IgE binds mast cells and mediates allergy and anti-parasite responses; it



is present in tiny amounts.

- (C) IgM is the largest (pentamer) and the first antibody made in a primary response; it does not cross the placenta.
- (D) IgA guards mucosal secretions, saliva, tears and milk; it is not the dominant serum antibody.

Final Answer: The class is IgG \Rightarrow

Answer: (B) [Go Back to Q17](#)

Q18.

Solution

Concept — Microbial production of organic acids: The fungus *Aspergillus niger* is used industrially to make citric acid, while acetic-acid (vinegar) bacteria of the genus *Acetobacter* (e.g. *Acetobacter aceti*) oxidise ethanol to acetic acid. (*Lactobacillus* makes lactic acid.)

Step 1 — Pair microbe with acid: Citric acid \rightarrow *Aspergillus niger*; acetic acid \rightarrow *Acetobacter aceti*.

Why other options are wrong:

- (B) *Lactobacillus* makes lactic (not citric) acid; *Saccharomyces* is a yeast used in fermentation/baking, not acetic-acid manufacture.
- (C) *Clostridium* is linked to butyric-acid/solvent fermentation, and *Penicillium* to antibiotics/cheese, not these acids.
- (D) Reverses the correct pairing of the two microbes.

Final Answer: *Aspergillus niger* (citric) and *Acetobacter aceti* (acetic) \Rightarrow

Answer: (A) [Go Back to Q18](#)

Q19.

Solution

Concept — Bioethics and IPR: Biopiracy is the unauthorised use and patenting of bio-resources and the traditional knowledge of a community/country by others without authorisation or fair benefit-sharing (e.g. the disputed patents on Basmati rice, turmeric and neem). In India, the Genetic Engineering Appraisal Committee (GEAC) decides on the validity and safety of releasing GM organisms.

Step 1 — Identify both terms: Unauthorised exploitation of bio-resources =



biopiracy; regulator of GMO release in India = GEAC.

Why other options are wrong:

- (A) Bioremediation is using microbes to clean pollutants; the WTO is a trade body, not India's GMO regulator.
- (B) Biofortification breeds nutrient-rich crops; the FDA is a US (not Indian) agency.
- (D) Biomagnification is the build-up of toxins along a food chain; the IUCN maintains the Red List, not GMO clearances.

Final Answer: Biopiracy and the GEAC \Rightarrow

[Go Back to Q19](#)

Q20.

Solution

Concept — Species–area relationship: Within a region, species richness rises with the area sampled. On log-log axes the relationship is a straight line, $\log S = \log C + Z \log A$, where Z is the slope, called the regression coefficient. For most taxa Z lies between 0.1 and 0.2, and it is steeper for very large areas.

Step 1 — Interpret the slope: The slope Z of the straight line on log-log axes is the regression coefficient (the species–area slope).

Why other options are wrong:

- (A) Carrying capacity (K) is the maximum population a habitat can sustain, unrelated to this slope.
- (C) The intrinsic rate of natural increase (r) describes population growth, not the species–area line.
- (D) The base of the natural logarithm ($e \approx 2.718$) is a constant, not the slope of this relationship.

Final Answer: Z is the regression coefficient (species–area slope) \Rightarrow

[Go Back to Q20](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	A	3	D	4	B	5	C
6	A	7	D	8	C	9	B	10	A
11	C	12	B	13	D	14	A	15	C
16	D	17	B	18	A	19	C	20	B

