NEET 2026 (3 May, cancelled) — Biology Question Paper with Solutions

88 Biology questions as set in the paper · answers checked by RankUp

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1. In angiosperms, root hairs arise from which one of the following regions of the root?

(A) The root cap zone
(B) The region of meristematic activity
(C) The region of elongation
(D) The region of maturation

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2. In which one of the following, the ovules are not enclosed by an ovary wall and remain exposed?

(A) Funaria
(B) Pinus
(C) Selaginella
(D) Wolffia

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3. In the lac operon, the z gene codes for

(A) permease
(B) transacetylase
(C) beta-galactosidase
(D) the repressor of lac operon

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4. Exploring molecular, genetic and species-level diversity for products of economic importance is called

(A) Biofortification
(B) Bioremediation
(C) Bioprospecting
(D) Biomagnification

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5. Match List I with List II:
List I:
A. Genetically modified organism
B. Thermostable DNA polymerase
C. Ti plasmid
D. pBR322
List II:
I. Agrobacterium tumefaciens
II. Bt cotton
III. Thermus aquaticus
IV. Escherichia coli
Choose the correct answer from the options given below:

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

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6. Match List I with List II:

List I:

A. Productivity

B. Net primary productivity

C. Gross primary productivity

D. Secondary productivity

List II:

I. Gross primary productivity minus respiration losses

II. Rate of formation of new organic matter by consumers

III. Rate of biomass production

IV. Rate of production of organic matter during photosynthesis

Choose the correct answer from the options given below:

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

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7. Since the origin and diversification of life on Earth, there have been five episodes of mass extinction of species. How is the sixth extinction, which is in progress, different from the previous episodes?

(A) The present net species extinction rate is zero.
(B) The current species extinction rate is nearly 10 times faster than in previous episodes.
(C) The present species extinction rates are 100 to 1000 times faster than in the pre-human times.
(D) The current species extinction rates are far lower than those in previous episodes.

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8. Alpha-helix is found in which level of protein structure?

(A) Secondary structure
(B) Tertiary structure
(C) Primary structure
(D) Quaternary structure

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9. The main function of bulliform cells in grasses is :

(A) to make the leaf impermeable to fungal spores.
(B) to transport water.
(C) to perform photosynthesis.
(D) to minimize water loss during water stress.

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10. Identify the correct sequence of steps in each cycle of Polymerase Chain Reaction :

(A) Extension → Annealing → Denaturation
(B) Annealing → Denaturation → Extension
(C) Denaturation → Extension → Annealing
(D) Denaturation → Annealing → Extension

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11. Match List I with List II :

List I (Phase of cell cycle):

A. G_1 phase

B. S phase

C. G_2 Phase

D. M phase

List II (Activity):

I. Actual cell division occurs

II. Cell is metabolically active and continuously grows but does not replicate its DNA

III. Synthesis of DNA occurs and the amount of DNA per cell doubles

IV. Proteins are synthesized while cell growth continues

Choose the correct answer from the options given below:

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

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

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

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

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12. Which of the following statements are correct?

A. The Amazon rainforest being cut and cleared for cultivation of soyabeans is an example of habitat loss.

B. Steller's sea cow and passenger pigeon became extinct due to over-exploitation by humans.

C. The Nile perch introduced into Lake Victoria in East Africa helped in population growth of cichlid fish in the lake.

D. Water hyacinth is an invasive species.

E. When a species becomes extinct, the plant and animal species associated with it are not affected.

Choose the correct answer from the options given below:

(A) A, B and E only

(B) A, B and D only

(C) C, D and E only

(D) B, C and D only

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13. Which of the following statements are correct with reference to a transcription unit?

A. A transcription unit in DNA is defined primarily by three regions : promoter, structural gene and terminator.

B. The promoter is said to be located towards the 5'-end of the structural gene.

C. The promoter is a DNA sequence that provides binding site for RNA polymerase.

D. The promoter defines the template and coding strands.

E. The terminator is located towards the 3'-end of the coding strand and it defines the end of the process of transcription.

Choose the correct answer from the options given below:

(A) A, B, C and D only

(B) A, C, D and E only

(C) B, C, D and E only

(D) A, B, C, D and E

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14. Which one of the following statements is not true about the universal rules of binomial nomenclature?

(A) Biological names are generally in Latin
(B) Both the words in a biological name, when handwritten, are separately underlined or printed in italics
(C) The specific epithet in the biological name starts with a small letter
(D) The first word in the biological name represents the specific epithet, while the second component denotes the genus

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15. Match List I with List II:
List I:
A. Decomposition
B. Detritus
C. Mineralisation
D. Humification
List II:
I. Accumulation of dark coloured amorphous colloidal substance
II. Release of inorganic nutrients by the activity of microbes in soil
III. Breaking down of complex organic matter into inorganic substances.
IV. Dead remains of plants and animals including fecal matter
Choose the correct answer from the options given below:

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

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16. Which one of the following is the site for active ribosomal RNA synthesis?

(A) Centrosome
(B) Chromatin
(C) Nucleolus
(D) Kinetochore

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17. $2(C_{51}H_{98}O_6) + 145O_2 \rightarrow 102CO_2 + 98H_2O$ + energy
The Respiratory Quotient (RQ) of a biomolecule used for respiration, as per the above equation would be :

(A) Between 0.5 and 0.95
(B) Less than 0.5
(C) 1.0
(D) Between 1.25 and 2

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18. Match List I with List II :

List I:

A. Incomplete dominance

B. Co-dominance

C. Pleiotropy

D. Polygenic inheritance

List II:

I. Human skin colour

II. Inheritance of flower colour in Antirrhinum sp.

III. Phenylketonuria disease in humans

IV. ABO blood groups

Choose the correct answer from the options given below:

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

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

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

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

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19. Arrange the following steps of DNA fingerprinting in a correct sequence.

A. Isolation of DNA and its digestion by restriction endonucleases.

B. Hybridisation using a labelled VNTR probe.

C. Transferring of separated DNA fragments to synthetic membranes.

D. Detection of hybridised DNA fragments by autoradiography.

E. Separation of DNA fragments by electrophoresis.

Choose the correct answer from the options given below:

(A) A, B, D, C, E

(B) A, D, B, E, C

(C) A, E, C, B, D

(D) A, E, B, C, D

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20. Which of the following statements are correct with reference to packaging of DNA helix ?

A. Histones are organized to form a unit of eight molecules called histone octamer.

B. Histones are negatively charged basic proteins.

C. Histones are rich in the basic amino acid residues - lysine and arginine.

D. The positively charged DNA is wrapped around the histone octamer to form nucleosome.

E. The packaging of chromatin at higher levels requires an additional set of proteins called non-histone chromosomal proteins.

Choose the correct answer from the options given below:

(A) A, C and E only

(B) B, D and E only

(C) C, D and E only

(D) A, B and D only

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21. Find the incorrect statement(s) about photosynthesis from the following:

A. The water splitting complex is associated with PSI.

B. C_4 plants use the C_3 pathway of CO_2 fixation as the main biosynthetic pathway.

C. In C_4 plants, photorespiration does not occur.

D. C_3 plants exhibit 'Kranz' anatomy.

E. ATP synthesis in chloroplast occurs through chemiosmosis.

Choose the answer from the options given below:

(A) B and C only
(B) B only
(C) B and E only
(D) A and D only

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22. Arrange the following steps of somatic hybridisation in a correct sequence.

A. Digestion of cell walls.

B. Isolation of naked protoplasts.

C. Fusion of protoplasts to get hybrid protoplast.

D. Isolation of single cells from two different varieties of plants.

E. Growing of hybrid protoplast to form a new plant.

Choose the correct answer from the options given below:

(A) D, A, B, C, E
(B) E, B, A, D, C
(C) D, B, A, E, C
(D) E, A, B, C, D

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23. Match List-I with List-II :

List-I:

A. Conjunctive tissue

B. Casparian strips

C. Subsidiary cells

D. Starch sheath

List-II:

I. Specialised cells in the vicinity of guard cells

II. Endodermal cells rich in starch

III. Tissue between xylem and phloem

IV. Endodermal cells with suberin deposition

Choose the correct answer from the options given below:

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

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24. Which one of the following is not a characteristic of plant cells in the phase of elongation?

(A) New cell wall deposition
(B) Cell enlargement
(C) Increased vacuolation
(D) Large conspicuous nuclei

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25. Match List-I with List-II

List-I (Growth Regulator):

A. 2,4-D

B. GA_3

C. Kinetin

D. ABA

List-II (Function/Effect):

I. Brewing industry

II. Stimulation of stomatal closure

III. Herbicide

IV. Nutrient mobilisation

Choose the correct answer from the options given below:

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

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26. The enzyme required for carboxylation in the Calvin cycle is

(A) Hexokinase
(B) PEP carboxylase
(C) RuBP carboxylase - oxygenase
(D) Carboxypeptidase

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27. How many ATP and NADPH molecules are required to make one molecule of glucose through the Calvin pathway?

(A) 18 ATP and 12 NADPH
(B) 12 ATP and 18 NADPH
(C) 24 ATP and 18 NADPH
(D) 6 ATP and 12 NADPH

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28. Which of the following is an in situ conservation method?

(A) Sacred Groves
(B) Wildlife Safari Parks
(C) Botanical Gardens
(D) Seed Banks

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29. Which of the following statements are not true regarding restriction endonucleases?

A. They are called molecular scissors.

B. These are the enzymes responsible for restricting the growth of bacteriophages in E. coli.

C. They cut the DNA only at the centre of the palindromic sites.

D. They remove nucleotides only from the ends of DNA fragments.

E. They recognise specific palindromic base-pair sequences.

Choose the answer from the options given below :

(A) A and B only
(B) A and E only
(C) D and E only
(D) C and D only

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30. In racemose inflorescence, ____.

(A) The main axis terminates in a flower
(B) Flowers are solitary
(C) The growth is limited
(D) Flowers are borne in an acropetal succession

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31. Arrange the following in the correct developmental sequence related to microsporogenesis :

A. Microspore tetrads
B. Sporogenous tissue
C. Pollen grains
D. Pollen mother cells
Choose the correct answer from the options given below :

(A) D, A, C, B
(B) B, D, A, C
(C) B, D, C, A
(D) A, D, C, B

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32. Identify the correct statements about biomolecules.

A. Lipids are generally water soluble.
B. Proteins are polypeptides.
C. Polysaccharides are long chains of sugars.
D. Adenine and guanine are substituted pyrimidines.
E. Almost all enzymes are proteins.
Choose the correct answer from the options given below :

(A) B, D and E only
(B) B, C and E only
(C) A, B and C only
(D) C, D and E only

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33. Which of the following statements are true with reference to the sex-determination in honeybees?

A. An offspring formed from the union of a sperm and an egg, develops as a female (queen or worker).
B. An unfertilized egg develops as a male by parthenogenesis.
C. A male has half the number of chromosomes than that of a female.
D. Males produce sperms by meiosis.
E. Honeybees have a haplodiploid sex-determination system.
Choose the correct answer from the options given below :

(A) A, B, C and E only
(B) B, C, D and E only
(C) A, B, C and D only
(D) A, B, D and E only

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34. Heterophyllous development in response to environment is an example of which of the following phenomena?

(A) Redifferentiation
(B) Elasticity
(C) Dedifferentiation
(D) Plasticity

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35. Which of the following statements are correct regarding amino acids?

A. They are substituted methanes.

B. Serine is an aromatic amino acid.

C. Valine is a neutral amino acid.

D. Lysine is an acidic amino acid.

Choose the correct answer from the options given below:

(A) C and D only

(B) B and C only

(C) A and C only

(D) A and B only

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36. "The Evil Quartet" of biodiversity loss includes which of the following?

(A) Over-exploitation; Alien species invasions; Air pollution; Co-extinctions

(B) Habitat loss and fragmentation; Air pollution; Water pollution; Co-extinctions

(C) Habitat loss and fragmentation; over-exploitation; Alien species invasions; Co-extinctions

(D) Over-exploitation; Alien species invasions; Soil pollution; Co-extinctions

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37. Match List-I with List-II:

List-I (Process):

A. Glycolysis

B. ETS

C. Accumulation of protons

D. Krebs' cycle

List-II (Location):

I. Inner mitochondrial membrane

II. Mitochondrial matrix

III. Cytoplasm

IV. Intermembrane space

Choose the correct answer from the options given below:

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

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

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

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

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38. Which one of the following is a triploid cell?

(A) Synergid

(B) Central cell

(C) Zygote

(D) Primary endosperm cell

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39. Which one of the following types of pollination brings genetically different types of pollen grains to the stigma?

(A) Autogamy

(B) Xenogamy

(C) Geitonogamy

(D) Cleistogamy

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40. Match List I with List II :

List I (Placentation):

A. Marginal

B. Axile

C. Parietal

D. Basal

List II (Example):

I. Mustard

II. Pea

III. Marigold

IV. Lemon

Choose the correct answer from the options given below:

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

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

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

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

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41. The main criteria used for Five Kingdom Classification proposed by R.H. Whittaker (1969) included :

A. Cell structure

B. Body organization

C. Presence of flagellum

D. Reproduction

E. Phylogenetic relationships

Choose the correct answer from the options given below :

(A) A, B, C, D and E

(B) B, C and D only

(C) A, B, D and E only

(D) A, B and E only

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42. Match List I with List II :

List I:

A. Trypsin

B. Morphine

C. Concanavalin A

D. Collagen

List II:

I. Intercellular ground substance

II. Lectin

III. Enzyme

IV. Alkaloid

Choose the correct answer from the options given below:

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

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

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

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

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43. Which of the following statements are correct with respect to DNA separation, isolation and visualization?

A. The cutting of DNA is done by molecular scissors.

B. The DNA fragments separate according to their size in an agarose gel, upon electrophoresis.

C. The separated DNA fragments can be seen without staining when exposed to UV light.

D. The separated DNA fragments, when stained with ethidium bromide, can be seen in visible light.

Choose the correct answer from the options given below :

(A) B and D only
(B) A and B only
(C) B and C only
(D) A and D only

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44. Which one of the following disorders is caused by the substitution of Glutamic acid (Glu) by Valine (Val) at the sixth position of the beta globin chain of the haemoglobin molecule?

(A) Thalassemia
(B) Sickle-cell anaemia
(C) Phenylketonuria
(D) Haemophilia

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45. Match List I with List II:

List I:

A. Cortisol

B. Aldosterone

C. Cholecystokinin

D. Progesterone

List II:

I. Stimulates the formation of alveoli in mammary glands

II. Produces anti-inflammatory reactions

III. Stimulates reabsorption of Na^+ and water from renal tubule

IV. Stimulates secretion of pancreatic enzymes and bile juice

Choose the correct answer from the options given below:

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

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46. Arrange the following events occuring in Renin-Angiotensin mechanism in the correct order:

A. Increase in blood pressure and Glomerular filtration rate

B. Reabsorption of Na^+ and water from distal parts of tubule due to Aldosterone

C. Fall in Glomerular filtration rate

D. Vasoconstriction by Angiotensin II and release of Aldosterone.

E. Renin converts Angiotensinogen into Angiotensin I, followed by Angiotensin II.

Choose the correct answer from the options given below:

(A) A, C, E, B, D
(B) C, A, B, D, E
(C) A, D, B, E, C
(D) C, E, D, B, A

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47. In humans, respiration occurs in the following steps. Arrange these steps in the correct order.

A. Diffusion of O_2 and CO_2 between blood and tissues

B. Diffusion of O_2 and CO_2 across alveolar membrane

C. Pulmonary ventilation by which atmospheric air is drawn in and CO_2 rich alveolar air is released out

D. Cellular respiration

E. Transport of gases by the blood

Choose the correct answer from the options given below

(A) A, B, C, D, E
(B) E, A, C, D, B
(C) C, B, E, A, D
(D) C, A, B, E, D

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48. The following are the stages of life cycle of Plasmodium. Arrange the stages in the proper order.

A. The parasites reproduce asexually in RBCs, bursting the cells.

B. The parasites reproduce asexually in liver cells, bursting the cells and releasing into blood.

C. Gametocytes develop in RBCs.

D. Sporozoites reach the liver through the blood.

E. Female mosquito injects sporozoites into humans during bite.

Choose the correct answer from the options given below:

(A) E, D, B, A, C
(B) A, B, C, D, E
(C) C, A, B, D, E
(D) E, C, D, B, A

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49. Insertion of a foreign DNA at BamHI site in an E.coli cloning vector pBR322 results in the loss of antibiotic resistance towards:

(A) Ampicillin and tetracycline
(B) Ampicillin
(C) Tetracycline
(D) Gentamycin

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50. The following reaction depicts the activity of a particular class of enzymes :
X–C–C–Y (Substrate) —E→ X–Y (Product) + C=C (Product)
Identify the enzymes class ' E ' from the following options :

(A) Transferases
(B) Isomerases
(C) Lyases
(D) Ligases

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51. The specific receptors for neurotransmitters in a synapse are present on ___.

(A) Schwann cell
(B) Pre-synaptic membrane
(C) Myelin sheath
(D) Post-synaptic membrane

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52. What is the probability of having children with 'O' blood group, where both mother and father are heterozygous for 'A' and 'B' blood group, respectively?

(A) 25%
(B) 0%
(C) 75%
(D) 50%

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53. Match List-I with List-II.
List-I (Respiratory Volume):
A. ERV (Expiratory Reserve Volume)
B. RV (Residual Volume)
C. IRV (Inspiratory Reserve Volume)
D. TV (Tidal Volume)
List-II (Capacity in mL):
I. 2500 – 3000 mL
II. 500 mL
III. 1000 – 1100 mL
IV. 1100 – 1200 mL
Choose the correct answer from the options given below :

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

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54. Which of the following is not an example of convergent evolution?

(A) Flippers of penguins and dolphins
(B) Eyes of octopuses and mammals
(C) Fore limbs of whales and bats
(D) Wings of butterflies and birds

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55. Male frogs can be distinguished from female frogs due to the presence of

A. Bulging eyes

B. Vocal sacs

C. Webbed digits in feet

D. Copulatory pad on first digit of fore limbs

E. Olive green-coloured skin with dark irregular spots

Choose the correct answer from the options given below

(A) B and C only

(B) C and E only

(C) A and B only

(D) B and D only

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56. A group of researchers procured some fish like animals and upon investigation the following characters were observed:

A. Endoskeleton was made of cartilage.

B. Ectoparasitic; as they were found attached on fish skin with their circular sucking mouth.

C. Paired fins and scales were absent, but 7 pairs of gill slits were present.

Which of the following species of animals did they consider to fit best with these characters?

(A) Scoliodon sp.

(B) Petromyzon sp.

(C) Exocoetus sp.

(D) Branchiostoma sp.

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57. Match List I with List II with respect to chronology of evolution of life forms

List-I:

A. About 65 mya

B. About 500 mya

C. About 350 mya

D. About 320 mya

List-II:

I. Jawless fish probably evolved

II. The dinosaurs suddenly disappeared from the earth

III. Seaweeds and few plants probably existed

IV. Invertebrates were formed and became active

Choose the correct answer from the options given below:

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

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

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

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

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58. Match List I with List II

List-I:

A. Progestasert

B. Multiload 375

C. Diaphragm

D. Saheli

List-II:

I. Barrier made of rubber used by females

II. Oral contraceptive

III. Hormone releasing IUD

IV. Copper releasing IUD

Choose the correct answer from the options given below:

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

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

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

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

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59. The WBC count of a person's blood sample is 8000/cumm. How many eosinophils and lymphocytes would be in the same blood sample approximately?

(A) 300 – 500/cumm and 1200 – 1500/cumm respectively

(B) 160 – 240/cumm and 1600 – 2000/cumm respectively

(C) 300 – 500/cumm and 500 – 700/cumm respectively

(D) 100 – 120/cumm and 160 – 200/cumm respectively

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60. Match List I with List II:

List I (Drug):

A. Nicotine

B. Morphine

C. Heroin

D. Cocaine

List II (Effect):

I. Causes sense of euphoria and increased energy

II. Stimulates adrenal gland to release catecholamines into blood circulation

III. Effective sedative and painkiller

IV. A depressant; slows down body function

Choose the correct answer from the options given below:

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

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

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

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

NEET 2026 (3 May, cancelled)

61. The human protein named α-1-antitrypsin, obtained from transgenic animals, is used for the treatment of ____.

(A) Emphysema

(B) Alzheimer's disease

(C) Rheumatoid arthritis

(D) Cystic fibrosis

NEET 2026 (3 May, cancelled)

62. Select the set of fishes which belong to the class Osteichthyes:

(A) Devil fish, Cuttlefish and Hagfish
(B) Saw fish, Fighting fish and Dog fish
(C) Starfish, Hagfish and Cuttlefish
(D) Flying fish, Angel fish and Fighting fish

NEET 2026 (3 May, cancelled)

63. Select the incorrect statements from the following:

A. Digestive system in Platyhelminthes is incomplete.
B. Bilateral symmetry is a characteristic feature of adult Echinoderms.
C. Pseudocoelom is possessed by Aschelminthes.
D. Notochord is persistent throughout life in the class Chondrichthyes.
E. Members of class Reptilia maintain a constant body temperature.
Choose the answer from the options given below:

(A) A and C only
(B) B and E only
(C) C and D only
(D) B and D only

NEET 2026 (3 May, cancelled)

64. Non-membrane bound cell organelles found in both prokaryotic and eukaryotic cells are ____.

(A) Ribosomes
(B) Lysosomes
(C) Centrosomes
(D) Mitochondria

NEET 2026 (3 May, cancelled)

65. Which of the following equations depicts Verhulst-Pearl logistic population growth?

(A) $dN/dt = rN((K + N)/K)$
(B) $dN/dt = rN((K - N)/K)$
(C) $dN/dt = rN((K - N)/N)$
(D) $dN/dt = rN(K/(K - N))$

NEET 2026 (3 May, cancelled)

66. Select the incorrect statement with reference to Rh grouping.

A. Erythroblastosis foetalis is a condition observed having foetus with Rh^{-ve} blood and mother with Rh^{+ve} blood.
B. Rh antigen is observed on RBCs in the majority of human beings.
C. Before blood transfusion, Rh group should also be matched.
D. Rh incompatibility is observed when a pregnant mother is Rh^{-ve} and the foetus is Rh^{+ve}.
E. Erythroblastosis foetalis can be avoided by administering anti-Rh antibodies to the mother immediately after the delivery of the second child.
Choose the answer from the options given below :

(A) C and D only
(B) A and B only
(C) A and E only
(D) B and C only

NEET 2026 (3 May, cancelled)

67. Match List I with List II:

List I (Bioactive molecules):

A. Streptokinase

B. Statins

C. Lipases

D. Cyclosporin A

List II (Importance):

I. Immunosuppressive agent

II. Removal of clots from the blood vessels

III. Blood cholesterol-lowering agent

IV. Detergent formulations

Choose the correct answer from the options given below:

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

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

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

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

NEET 2026 (3 May, cancelled)

68. Match List I with List II:

List I:

A. Molluscs

B. Reptiles

C. Adult amphibians

D. Amoeba

List II:

I. Pulmonary respiration only

II. Branchial respiration

III. Cellular respiration

IV. Pulmonary and cutaneous respiration

Choose the correct answer from the options given below:

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

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

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

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

NEET 2026 (3 May, cancelled)

69. The sixth mutant codon of beta globin gene causing polymerization of Haemoglobin and change in RBC shape is ____

(A) GUG

(B) AUG

(C) GAG

(D) CAG

NEET 2026 (3 May, cancelled)

70. Choose the correct statements regarding muscle contraction.

A. A motor neuron carries a signal sent by the Central Nervous System (CNS) to the sarcolemma of the muscle fibre.

B. The neural signal generates an action potential which causes the release of Ca^{2+} into sarcoplasm.

C. Increase in Ca^{2+} inactivates the actin for breaking cross bridges.

D. Actin binds to the myosin head to form a cross bridge.

E. Shortening of sarcomere takes place, by pulling actin filaments towards the centre of 'A' band.

Choose the correct answer from the options given below :

(A) C and D only
(B) A and B only
(C) C and E only
(D) A, B, D and E only

NEET 2026 (3 May, cancelled)

71. Which of the following statements are correct with reference to human endoskeleton?

A. Human skull is monocondylic.

B. The joint between any two adjoining vertebrae is a cartilaginous joint.

C. In human beings, the number of cervical vertebrae is seven.

D. All ribs except the last 2 pairs are bicephalic.

E. The occipital bone of skull is articulated with atlas vertebra.

Choose the correct answer from the options given below:

(A) B and E only
(B) B, C and E only
(C) C, D and E only
(D) A, B and D only

NEET 2026 (3 May, cancelled)

72. Spermatogonia undergo a series of cell divisions statements to produce sperms. Select the correct from the following :

A. Spermatogonia always undergo meiotic cell division.

B. Primary spermatocytes divide mitotically to produce secondary spermatocytes.

C. Secondary spermatocytes, through their second meiotic division, produce haploid spermatids.

D. Spermatids produce spermatozoa through mitosis.

E. Spermatids transform into spermatozoa by spermiogenesis.

Choose the correct answer from the options given below:

(A) A and E only
(B) C and E only
(C) A, C and E only
(D) B, C and D only

NEET 2026 (3 May, cancelled)

73. The JGA (Juxta Glomerular Apparatus) is a special sensitive region formed by cellular modifications in ____ related to the same nephron.

(A) Distal convoluted tubule and efferent renal arteriole
(B) Proximal convoluted tubule and efferent renal arteriole
(C) Proximal convoluted tubule and afferent renal arteriole
(D) Distal convoluted tubule and afferent renal arteriole

NEET 2026 (3 May, cancelled)

74. Which one of the following is an appropriate example of sexual deceit?

(A) Female wasp and fig
(B) Ophrys and bumblebee
(C) Sea anemone and clown fish
(D) Cuckoo and crow

NEET 2026 (3 May, cancelled)

75. Choose the correct statements regarding frog's anatomy:
A. Hepatic portal system is the special venous connection between liver and intestine.
B. There are twelve pairs of cranial nerves arising from the brain.
C. The ureters and oviducts open separately into the cloaca in female frogs.
D. Hind-brain consists of cerebellum, medulla oblongata and optic lobes.
E. Sinus venosus joins the right atrium of heart.
Choose the correct answer from the options given below:

(A) A, B and C only
(B) B and D only
(C) B and C only
(D) A, C and E only

NEET 2026 (3 May, cancelled)

76. Match List I with List II related to embryonic development at various months of pregnancy:
List I:
A. The foetus movement starts and hair appears on the head
B. The foetus develops limbs and digits
C. The foetus develops external genital organs
D. The foetus body is covered with fine hair; eyelids separate and eyelashes are formed
List II:
I. 24 weeks of pregnancy
II. 20 weeks of pregnancy
III. 8 weeks of pregnancy
IV. 12 weeks of pregnancy
Choose the correct answer from the options given below:

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

NEET 2026 (3 May, cancelled)

77. In a population of a grasshopper species, the chromosome number of some members is 23 and some other members possess 24 chromosomes. The 23 and 24 chromosome-bearing members in this species are ____.

(A) females and males, respectively
(B) all males
(C) males and females, respectively
(D) all females

NEET 2026 (3 May, cancelled)

78. In which animal do haploid cells divide mitotically to produce gametes?

(A) Male honeybees
(B) Male earthworms
(C) Male frogs
(D) Male grasshoppers

NEET 2026 (3 May, cancelled)

79. Arrange the following cell layers/structures around the female gamete, from outer to inner side :

A. Zona pellucida

B. Perivitelline space

C. Corona radiata

D. Plasma membrane of ovum

Choose the correct answer from the options given below :

(A) D, B, A, C

(B) C, A, D, B

(C) C, A, B, D

(D) A, C, B, D

NEET 2026 (3 May, cancelled)

80. What is the reason behind production of large holes in 'Swiss Cheese'?

(A) The production of large amount of CO_2 by Propionibacterium sharmanii

(B) The production of large amount of CO_2 by Clostridium butylicum

(C) The production of large amount of CO_2 and H_2 by lactic acid bacteria called Lactobacillus

(D) The production of large amount of CO_2 and H_2 by Trichoderma polysporum

NEET 2026 (3 May, cancelled)

81. The toxin proteins isolated from Bacillus thuringiensis, coded by which of the following genes would control cotton bollworms and corn borer, respectively?

(A) cryIAc and cryIAb

(B) cryIAc and cryIIAb

(C) cryIIAb and cryIAc

(D) cryIAc and cryIIIAb

NEET 2026 (3 May, cancelled)

82. Ecological pyramids represent the relationship between the organisms at different trophic levels and they are generally inverted for:

(A) Pyramid of number in grassland

(B) Pyramid of energy in pond ecosystem

(C) Pyramid of biomass in grassland

(D) Pyramid of biomass in sea

NEET 2026 (3 May, cancelled)

83. Choose the correct statement regarding GIFT to overcome infertility.

(A) Ova collected from a female donor are transferred to the uterus of an infertile female.

(B) Early embryos with up to 8 blastomeres are transferred to the uterus of an infertile female.

(C) Early embryos with up to 8 blastomeres are transferred into the fallopian tube of an infertile female.

(D) It is the transfer of an ovum collected from a donor into the fallopian tube of another female who cannot produce ovum but can provide suitable environment for fertilization and development.

NEET 2026 (3 May, cancelled)

84. Choose the correct statements regarding cell organelles and their inclusions.

A. The endomembrane system includes Golgi complex, endoplasmic reticulum and mitochondria.

B. Rough endoplasmic reticulum bears ribosomes on its surface.

C. Both mitochondria and plastids have circular DNA.

D. A network of microtubules, microfilaments and intermediate filaments present in the cytoplasm is called cytoskeleton.

E. Mitochondrion is a single membrane-bound structure.

Choose the correct answer from the options given below :

(A) A and B only
(B) A, B and C only
(C) C, D and E only
(D) B, C and D only

NEET 2026 (3 May, cancelled)

85. Match List I with List II related to muscular/skeletal system:

List I:

A. Tetany

B. Arthritis

C. Myasthenia gravis

D. Muscular dystrophy

List II:

I. Inflammation of joints

II. Autoimmune disorder affecting neuromuscular junction

III. Wild contraction in muscle due to low Ca^{2+} in body fluid

IV. Progressive degeneration of skeletal muscle

Choose the correct answer from the options given below:

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

NEET 2026 (3 May, cancelled)

86. Evolution of human appears parallel to the progressive development of brain and language skills. As such, the evolution of individual species in the sequence of their appearance is:

(A) Ramapithecus → Homo habilis → Homo erectus → Neanderthal → Homo sapiens
(B) Homo sapiens → Ramapithecus → Homo habilis → Neanderthal → Homo erectus
(C) Homo habilis → Homo erectus → Ramapithecus → Neanderthal → Homo sapiens
(D) Neanderthal → Ramapithecus → Homo habilis → Homo erectus → Homo sapiens

NEET 2026 (3 May, cancelled)

87. The flightless bird with forelimbs modified as paddle-like structures suited for swimming is known as:

(A) Struthio
(B) Neophron
(C) Aptenodytes
(D) Psittacula

88. Choose the correct statements regarding population interactions between two species.

A. In both parasitism and commensalism, only one species benefits and the other species is harmed.

B. Both species benefit in mutualism.

C. Both species benefit in commensalism.

D. In parasitism, only one species benefits and the other species is harmed.

E. In amensalism, one species is harmed and the other is unaffected.

Choose the correct answer from the options given below:

(A) B and E only
(B) A and B only
(C) B, D and E only
(D) A and D only

Answer key and explanations

1. Answer: (D) The region of maturation

Root hairs develop from epidermal cells in the region of maturation, which lies just above the region of elongation. Cells of the elongation zone are still enlarging and do not yet bear root hairs, while the meristematic zone and the root cap only produce and protect new cells.

2. Answer: (B) Pinus

Pinus is a gymnosperm, and gymnosperms bear naked ovules that are not enclosed by an ovary wall. Funaria (a moss) and Selaginella (a pteridophyte) do not form ovules at all, while Wolffia is an angiosperm whose ovules lie inside an ovary.

3. Answer: (C) beta-galactosidase

In the lac operon the structural gene z codes for beta-galactosidase, which hydrolyses lactose into glucose and galactose. Permease is coded by the y gene, transacetylase by the a gene, and the repressor by the separate regulatory i gene.

4. Answer: (C) Bioprospecting

Bioprospecting is the search through molecular, genetic and species diversity for products of economic value such as drugs. Biofortification is breeding crops for higher nutrient content, bioremediation is using organisms to clean pollutants, and biomagnification is the build-up of toxins along a food chain.

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

Bt cotton is a genetically modified crop, the thermostable Taq DNA polymerase comes from Thermus aquaticus, the Ti plasmid belongs to Agrobacterium tumefaciens, and pBR322 is an Escherichia coli cloning vector. Pairing the Ti plasmid with Bt cotton is the common trap; Agrobacterium is only the source of the plasmid.

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

Productivity is the rate of biomass production; gross primary productivity is the rate of production of organic matter during photosynthesis; net primary productivity is GPP minus respiration losses; and secondary productivity is the rate of formation of new organic matter by consumers. Swapping the GPP and NPP definitions is the usual mistake.

7. Answer: (C) The present species extinction rates are 100 to 1000 times faster than in the pre-human times.

The ongoing sixth extinction is driven largely by human activities, and species are being lost about 100 to 1000 times faster than in pre-human times. Saying it is only 10 times faster understates the rate, and the rate is neither zero nor lower than before.

8. Answer: (A) Secondary structure

The alpha-helix is a secondary structure, formed when the polypeptide chain coils through hydrogen bonds between nearby peptide groups. The primary structure is only the amino acid sequence, the tertiary structure is the three-dimensional folding of the whole chain, and the quaternary structure is the assembly of several chains.

9. Answer: (D) to minimize water loss during water stress.

Bulliform cells are large, empty, colourless cells in the upper epidermis of grass leaves. When they lose turgor during water stress the leaf rolls inward, which reduces the exposed surface and cuts water loss. They are not photosynthetic and play no role in water transport.

10. Answer: (D) Denaturation → Annealing → Extension

Each PCR cycle first separates the DNA strands by heat (denaturation), then lets the primers bind to the single strands (annealing), and finally Taq polymerase extends the primers (extension). Primers cannot anneal until the strands have separated, and extension needs annealed primers.

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

In G_1 the cell is metabolically active and grows without replicating DNA; in S phase DNA is synthesised and its amount doubles; in G_2 proteins are made while growth continues; and actual division happens in M phase. G_1 and G_2 are both growth phases, but only G_2 is described as preparing proteins after replication.

12. Answer: (B) A, B and D only

Clearing the Amazon for soyabeans is habitat loss, Steller's sea cow and the passenger pigeon were wiped out by over-exploitation, and water hyacinth is an invasive alien weed, so these three are correct. The Nile perch actually drove more than 200 cichlid species of Lake Victoria to extinction, and extinction of one species can cause co-extinction of species tied to it.

13. Answer: (D) A, B, C, D and E

All five statements are correct. Every transcription unit consists of a promoter, the structural gene and a terminator. The promoter sits upstream, towards the 5'-end of the structural gene (with respect to the coding strand), provides the binding site for RNA polymerase and so fixes which strand is the template. The terminator lies downstream, towards the 3'-end of the coding strand, and marks where transcription stops.

14. Answer: (D) The first word in the biological name represents the specific epithet, while the second component denotes the genus

In binomial nomenclature the first word is the genus and the second is the specific epithet, as in Mangifera indica, so the statement that reverses them is false. The other rules hold: names are Latin or Latinised, each word is underlined separately when handwritten or printed in italics, and the specific epithet starts with a small letter.

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

Decomposition is the breakdown of complex organic matter into inorganic substances, detritus is the dead remains of plants and animals including faecal matter, mineralisation is the release of inorganic nutrients by soil microbes, and humification is the build-up of the dark, amorphous, colloidal humus. Humification and mineralisation are the two steps most often swapped.

16. Answer: (C) Nucleolus

The nucleolus is the site of active ribosomal RNA synthesis, which is why it is larger in cells making a lot of protein. Chromatin carries the genes in general, while the centrosome organises spindle fibres and the kinetochore attaches chromosomes to the spindle.

17. Answer: (A) Between 0.5 and 0.95

RQ = volume of CO_2 released / volume of O_2 consumed = 102/145 ≈ 0.70, which falls between 0.5 and 0.95. The equation is the respiration of tripalmitin, a fat. An RQ of 1.0 applies to carbohydrates, and values above 1 apply to organic acids.

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

Flower colour in Antirrhinum (snapdragon) shows incomplete dominance, the ABO blood groups show co-dominance of the two dominant blood-group alleles, phenylketonuria is a classic case of pleiotropy since one gene affects several traits, and human skin colour is polygenic.

19. Answer: (C) A, E, C, B, D

DNA is first isolated and cut with restriction enzymes, the fragments are separated by electrophoresis, blotted onto a synthetic membrane, hybridised with a labelled VNTR probe and finally detected by autoradiography. Hybridisation can only be done after the fragments have been transferred to the membrane, which rules out sequences placing hybridisation before blotting.

20. Answer: (A) A, C and E only

Eight histone molecules form the octamer, histones are rich in lysine and arginine, and higher-order packaging needs non-histone chromosomal proteins, so these three statements are correct. The charges are reversed in the other two: histones are positively charged basic proteins, and the DNA wrapped around them is negatively charged.

21. Answer: (D) A and D only

The water-splitting complex is linked to PS II, not PS I, and Kranz anatomy is a feature of C_4 plants, not C_3 plants, so these two statements are incorrect. C_4 plants do use the Calvin (C_3) cycle in bundle-sheath cells as their main biosynthetic pathway, they avoid photorespiration by concentrating CO_2, and chloroplast ATP is made by chemiosmosis.

22. Answer: (A) D, A, B, C, E

Single cells are first isolated from the two plant varieties, their cell walls are digested to release naked protoplasts, the protoplasts are fused into a hybrid protoplast, and the hybrid is grown into a new plant. Protoplasts cannot be isolated before the walls are digested, and the process cannot begin with growing the plant.

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

Conjunctive tissue is the parenchyma between xylem and phloem bundles, Casparian strips are suberin deposits on endodermal cell walls, subsidiary cells are the specialised epidermal cells near the guard cells, and the starch sheath is the starch-rich endodermis of the dicot stem. Casparian strips and the starch sheath both concern the endodermis, so they are easy to swap.

24. Answer: (D) Large conspicuous nuclei

Large conspicuous nuclei, dense protoplasm and thin walls are features of meristematic cells. Cells in the elongation phase show more vacuolation, cell enlargement and new cell wall deposition.

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

2,4-D is an auxin used as a weedicide/herbicide, GA_3 speeds up malting and is used in the brewing industry, the cytokinin kinetin promotes nutrient mobilisation and delays senescence, and ABA stimulates stomatal closure.

26. Answer: (C) RuBP carboxylase - oxygenase

In the Calvin cycle CO_2 is fixed onto RuBP by RuBisCO (RuBP carboxylase-oxygenase), giving two molecules of 3-PGA. PEP carboxylase does the first fixation in the mesophyll of C_4 plants, not in the Calvin cycle; hexokinase works in glycolysis and carboxypeptidase digests proteins.

27. Answer: (A) 18 ATP and 12 NADPH

Fixing one CO_2 takes 3 ATP and 2 NADPH, and a glucose needs six turns of the cycle, so $6 \times 3 = 18$ ATP and $6 \times 2 = 12$ NADPH. The option with 12 ATP and 18 NADPH reverses the two numbers.

28. Answer: (A) Sacred Groves

Sacred groves are forest patches protected in their natural habitat by local communities, which makes them in situ conservation. Wildlife safari parks, botanical gardens and seed banks all keep organisms or their germplasm away from their natural habitat, which is ex situ conservation.

29. Answer: (D) C and D only

Restriction endonucleases usually cut a little away from the centre of the palindrome, between the same two bases on both strands, leaving sticky ends; and removing nucleotides from the ends of DNA is what exonucleases do. So these two statements are untrue. The enzymes are called molecular scissors, recognise specific palindromic sequences and were found because they restrict bacteriophage growth in E. coli.

30. Answer: (D) Flowers are borne in an acropetal succession

In a racemose inflorescence the main axis keeps growing, so flowers are borne laterally in acropetal succession, with the oldest at the base. Having the main axis end in a flower with limited growth describes a cymose inflorescence, and solitary flowers are not an inflorescence at all.

31. Answer: (B) B, D, A, C

Sporogenous tissue in the young anther gives rise to pollen (microspore) mother cells, which divide by meiosis to form microspore tetrads, and these separate and mature into pollen grains. Pollen grains are the end product, so they cannot come before the tetrads.

32. Answer: (B) B, C and E only

Proteins are polypeptides, polysaccharides are long chains of sugars, and nearly all enzymes are proteins (ribozymes are the exception), so these are correct. Lipids are generally insoluble in water, and adenine and guanine are substituted purines, not pyrimidines.

33. Answer: (A) A, B, C and E only

Honeybees are haplodiploid: fertilised eggs ($2n = 32$) become females (queens or workers) and unfertilised eggs develop parthenogenetically into haploid males ($n = 16$). Because drones are already haploid, they produce sperms by mitosis, not meiosis, so that statement is the false one.

34. Answer: (D) Plasticity

Heterophylly, as in buttercup leaves that take different shapes in air and in water, shows that a plant can follow different growth pathways in response to its environment. This ability is called plasticity. Dedifferentiation and redifferentiation describe cells regaining and then losing the ability to divide, not changes in organ form.

35. Answer: (C) A and C only

Amino acids are substituted methanes, with the α-carbon carrying H, an amino group, a carboxyl group and an R group, and valine is a neutral amino acid. Serine is a hydroxy amino acid, not an aromatic one (tyrosine, phenylalanine and tryptophan are aromatic), and lysine is basic, not acidic.

36. Answer: (C) Habitat loss and fragmentation; over-exploitation; Alien species invasions; Co-extinctions

The "Evil Quartet" is habitat loss and fragmentation, over-exploitation, alien species invasions and co-extinctions. Pollution harms biodiversity too, but it is not one of the four named causes.

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

Glycolysis takes place in the cytoplasm, the electron transport system lies in the inner mitochondrial membrane, protons pumped by the ETS build up in the intermembrane space, and the Krebs cycle runs in the mitochondrial matrix.

38. Answer: (D) Primary endosperm cell

The primary endosperm cell forms when a male gamete fuses with the two polar nuclei (triple fusion), so it is triploid (3n). Synergids are haploid, the zygote is diploid, and the central cell holds two separate haploid polar nuclei before fertilisation.

39. Answer: (B) Xenogamy

Xenogamy carries pollen from a flower of a different plant, so the pollen is genetically different from the stigma. Geitonogamy moves pollen between flowers of the same plant, so it is genetically the same as autogamy, and cleistogamous flowers never open and are always self-pollinated.

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

Pea has marginal placentation, lemon has axile placentation, mustard has parietal placentation and marigold (a composite) has basal placentation.

41. Answer: (C) A, B, D and E only

Whittaker's criteria were cell structure, body (thallus) organisation, mode of nutrition, reproduction and phylogenetic relationships. The presence of a flagellum was not one of the criteria.

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

Trypsin is a digestive enzyme, morphine is an alkaloid, concanavalin A is a lectin, and collagen is the main protein of the intercellular ground substance.

43. Answer: (B) A and B only

DNA is cut by restriction enzymes ("molecular scissors"), and in agarose gel electrophoresis the fragments separate by size, so these two statements are correct. The fragments cannot be seen without staining; after ethidium bromide staining they are seen as orange bands under UV light, not in visible light.

44. Answer: (B) Sickle-cell anaemia

Sickle-cell anaemia comes from a single base change (GAG to GUG) that puts valine in place of glutamic acid at position six of the β-globin chain. Thalassemia is a quantitative defect where too little globin is made, not an amino acid substitution.

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

Cortisol, a glucocorticoid, produces anti-inflammatory reactions; aldosterone stimulates reabsorption of Na^+ and water from the renal tubules; cholecystokinin stimulates secretion of pancreatic enzymes and bile; and progesterone stimulates formation of alveoli in the mammary glands.

46. Answer: (D) C, E, D, B, A

Falling GFR triggers renin release; renin converts angiotensinogen to angiotensin I, which becomes angiotensin II; angiotensin II causes vasoconstriction and aldosterone release; aldosterone drives Na^+ and water reabsorption in the distal tubule; and blood pressure and GFR rise again. The rise in GFR is the result of the process, so it must come last.

47. Answer: (C) C, B, E, A, D

Respiration starts with pulmonary ventilation, followed by diffusion of gases across the alveolar membrane, transport of gases by blood, diffusion between blood and tissues, and finally use of O_2 in cellular respiration. Gas exchange at the alveoli has to come before transport, so placing tissue diffusion second is wrong.

48. Answer: (A) E, D, B, A, C

The female Anopheles injects sporozoites, which travel through blood to the liver, multiply asexually in liver cells and are released into blood. They then multiply asexually in RBCs, bursting them, and finally gametocytes develop in the RBCs. Gametocytes form only after the RBC cycles, so they cannot come right after the bite.

49. Answer: (C) Tetracycline

The BamHI site of pBR322 lies inside the tetracycline-resistance gene (tet^R), so inserting DNA there inactivates it and the recombinants lose tetracycline resistance. Ampicillin resistance stays intact, which is what allows recombinants to be selected; pBR322 carries no gentamycin-resistance gene.

50. Answer: (C) Lyases

The enzyme removes the groups X and Y from adjacent carbon atoms without hydrolysis, leaving a C=C double bond. Removing groups to form a double bond is what lyases do. Transferases move a group from one molecule to another, and ligases join two molecules.

51. Answer: (D) Post-synaptic membrane

Neurotransmitter released from the pre-synaptic terminal binds to specific receptors on the post-synaptic membrane, opening ion channels there. The pre-synaptic membrane releases the transmitter; Schwann cells and the myelin sheath only insulate axons.

52. Answer: (A) 25%

The mother is IAi and the father is IBi. The cross gives IAIB, IAi, IBi and ii in equal proportions, so the chance of an ii (O group) child is 1/4 = 25%. The answer is not 0% because each heterozygous parent can pass on the recessive i allele.

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

In a healthy adult, tidal volume is about 500 mL, IRV about 2500–3000 mL, ERV about 1000–1100 mL and RV about 1100–1200 mL. ERV and RV have close values, but the residual volume is slightly larger.

54. Answer: (C) Fore limbs of whales and bats

The forelimbs of whales and bats share the same basic bone plan inherited from a common ancestor but do different jobs. They are homologous organs, which shows divergent evolution. Penguin and dolphin flippers, octopus and mammal eyes, and butterfly and bird wings are analogous structures from convergent evolution.

55. Answer: (D) B and D only

Male frogs have sound-producing vocal sacs and a copulatory pad on the first digit of each forelimb, and females lack both. Bulging eyes, webbed feet and olive-green spotted skin are found in both sexes, so they cannot tell them apart.

56. Answer: (B) Petromyzon sp.

Having a cartilaginous skeleton, a circular sucking mouth used to attach as an ectoparasite on fish, no scales or paired fins, and seven pairs of gill slits are features of cyclostomes such as Petromyzon (the lamprey). Scoliodon is a shark with paired fins and placoid scales, Exocoetus is a bony fish, and Branchiostoma is a cephalochordate with no cartilaginous skeleton.

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

The dinosaurs suddenly disappeared about 65 mya, invertebrates were formed and active by about 500 mya, jawless fish probably evolved around 350 mya, and seaweeds and a few plants probably existed around 320 mya.

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

Progestasert is a hormone-releasing IUD, Multiload 375 is a copper-releasing IUD, the diaphragm is a rubber barrier used by females, and Saheli is a non-steroidal oral contraceptive pill. Progestasert and Multiload are both IUDs, so they are easy to swap.

59. Answer: (B) 160 – 240/cumm and 1600 – 2000/cumm respectively

Eosinophils make up about 2–3% of WBCs, so 2–3% of 8000 = 160–240/cumm. Lymphocytes make up about 20–25%, so 20–25% of 8000 = 1600–2000/cumm. The other ranges do not match these percentages.

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

Nicotine stimulates the adrenal gland to release adrenaline and noradrenaline, morphine is an effective sedative and painkiller, heroin (smack) is a depressant that slows body functions, and cocaine causes euphoria and increased energy. Heroin and morphine are both opioids; the difference is that morphine is described as the medical sedative and painkiller.

61. Answer: (A) Emphysema

Human α-1-antitrypsin produced by transgenic animals is used to treat emphysema. Cystic fibrosis is another lung disease and a common distractor, but this protein is not its treatment.

62. Answer: (D) Flying fish, Angel fish and Fighting fish

Flying fish (Exocoetus), angel fish (Pterophyllum) and fighting fish (Betta) are all bony fishes. Saw fish and dog fish are cartilaginous fishes, hagfish is a cyclostome, and cuttlefish, devil fish and starfish are not fishes at all.

63. Answer: (B) B and E only

Adult echinoderms are radially symmetrical (only their larvae are bilateral), and reptiles are cold-blooded (poikilothermous), so these two statements are incorrect. Flatworms have an incomplete gut with a single opening, aschelminthes are pseudocoelomates, and cartilaginous fishes keep their notochord throughout life.

64. Answer: (A) Ribosomes

Ribosomes have no membrane and occur in both prokaryotes (70S) and eukaryotes (80S). Centrosomes have no membrane but are absent from prokaryotes, and lysosomes and mitochondria are membrane-bound organelles found only in eukaryotes.

65. Answer: (B) $dN/dt = rN((K - N)/K)$

Verhulst-Pearl logistic growth is $dN/dt = rN[(K - N)/K]$, so growth slows as N approaches the carrying capacity K and stops when $N = K$. The other forms either put N in the denominator or make growth speed up as N nears K, which is not logistic growth.

66. Answer: (C) A and E only

Erythroblastosis foetalis occurs when the mother is Rh-negative and the foetus Rh-positive, not the reverse. It is prevented by giving anti-Rh antibodies to the mother right after the first delivery, not the second. So these two statements are wrong. About 80% of people carry the Rh antigen, and Rh grouping must be matched before transfusion.

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

Streptokinase, from Streptococcus, removes clots from blood vessels; statins, from Monascus purpureus, lower blood cholesterol; lipases are used in detergent formulations to remove oily stains; and cyclosporin A, from Trichoderma polysporum, is an immunosuppressant used in organ transplants.

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

Molluscs mostly breathe through gills (branchial respiration), reptiles breathe only through lungs, adult amphibians use both lungs and moist skin, and Amoeba exchanges gases by simple diffusion across its body surface, which this list calls cellular respiration.

69. Answer: (A) GUG

In sickle-cell anaemia the normal sixth codon GAG (glutamic acid) is changed to GUG (valine). This makes the mutant haemoglobin polymerise at low oxygen and turns RBCs sickle-shaped. GAG is the normal codon, not the mutant one.

70. Answer: (D) A, B, D and E only

The motor neuron carries the CNS signal to the sarcolemma, the action potential releases Ca^{2+} into the sarcoplasm, actin and myosin heads link to form cross bridges, and the actin filaments are pulled towards the middle of the dark band, shortening the sarcomere. Ca^{2+} binds troponin and exposes the active sites on actin, so it activates cross-bridge formation rather than inactivating actin.

71. Answer: (B) B, C and E only

Adjacent vertebrae are joined by cartilaginous joints, humans have seven cervical vertebrae, and the two occipital condyles articulate with the atlas, so these are correct. The human skull is dicondylic, not monocondylic, and every rib, including the floating ribs, is bicephalic, with two articulating surfaces at its dorsal end.

72. Answer: (B) C and E only

Secondary spermatocytes complete the second meiotic division to form haploid spermatids, and spermatids change into spermatozoa by spermiogenesis, which involves no division. Spermatogonia multiply by mitosis (only those that become primary spermatocytes enter meiosis), and primary spermatocytes divide meiotically, not mitotically.

73. Answer: (D) Distal convoluted tubule and afferent renal arteriole

The JGA forms where the distal convoluted tubule touches the afferent arteriole of the same nephron. The arteriole wall carries the renin-secreting juxtaglomerular cells and the tubule carries the macula densa. The PCT and the efferent arteriole take no part in it.

74. Answer: (B) Ophrys and bumblebee

One petal of the Mediterranean orchid Ophrys looks like a female bee, so male bees try to mate with it ("pseudocopulation") and pick up pollen. This is sexual deceit. The fig and wasp relationship is mutualism, the clownfish and sea anemone is commensalism, and the cuckoo laying eggs in a crow's nest is brood parasitism.

75. Answer: (D) A, C and E only

In the frog the hepatic portal system links the intestine and liver, the ureters and oviducts open separately into the cloaca in females, and the sinus venosus joins the right atrium, so these are correct. Frogs have ten pairs of cranial nerves, not twelve, and the optic lobes belong to the midbrain, not the hindbrain.

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

Limbs and digits develop by the end of the second month (8 weeks), external genital organs are well developed by 12 weeks, foetal movements and hair on the head appear in the fifth month (about 20 weeks), and by 24 weeks the body is covered with fine hair and the eyelids separate.

77. Answer: (C) males and females, respectively

Grasshoppers have XO sex determination: females are XX and males have a single X with no Y. So the 23-chromosome individuals are males and the 24-chromosome individuals are females; the reverse pairing is the trap.

78. Answer: (A) Male honeybees

Male honeybees (drones) develop from unfertilised eggs and are haploid, so they form sperms by mitosis. The males of earthworms, frogs and grasshoppers have diploid germ cells and make gametes by meiosis.

79. Answer: (C) C, A, B, D

From the outside in, the ovum is surrounded by the corona radiata of follicle cells, then the zona pellucida, then the perivitelline space, and then its own plasma membrane. The perivitelline space lies between the zona and the plasma membrane, so it cannot come after the membrane.

80. Answer: (A) The production of large amount of CO_2 by Propionibacterium sharmanii

The large holes in Swiss cheese come from the large amount of CO_2 released by the bacterium Propionibacterium sharmanii. Clostridium butylicum produces butyric acid, Lactobacillus forms curd, and Trichoderma polysporum is the fungus that yields the immunosuppressant cyclosporin.

81. Answer: (A) cryIAc and cryIAb

The proteins coded by cryIAc and cryIIAb control cotton bollworms, while the protein coded by cryIAb controls the corn borer. So the pair "cryIAc then cryIAb" fits. The pair with cryIIAb second gives two cotton-bollworm genes, and cryIIIAb is not a gene named for either pest.

82. Answer: (D) Pyramid of biomass in sea

In the sea the standing biomass of phytoplankton is smaller than that of the fishes feeding on them, so the pyramid of biomass is inverted. Grassland pyramids of number and biomass are upright, and a pyramid of energy can never be inverted.

83. Answer: (D) It is the transfer of an ovum collected from a donor into the fallopian tube of another female who cannot produce ovum but can provide suitable environment for fertilization and development.

Gamete intra-fallopian transfer (GIFT) places an ovum from a donor into the fallopian tube of a woman who cannot make ova but can support fertilisation and development. Transferring embryos of up to 8 blastomeres into the fallopian tube is ZIFT, and placing embryos in the uterus is IUT.

84. Answer: (D) B, C and D only

RER carries ribosomes, mitochondria and plastids contain circular DNA, and the cytoskeleton is the network of microtubules, microfilaments and intermediate filaments, so these are correct. Mitochondria are not part of the endomembrane system because their functions are not coordinated with it, and they are bounded by a double membrane.

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

Tetany is rapid spasms (wild contractions) caused by low Ca^{2+} in body fluid, arthritis is inflammation of joints, myasthenia gravis is an autoimmune disorder of the neuromuscular junction, and muscular dystrophy is progressive degeneration of skeletal muscle, mostly genetic.

86. Answer: (A) Ramapithecus → Homo habilis → Homo erectus → Neanderthal → Homo sapiens

Ramapithecus, a hominid-like primate of about 15 mya, came first; then Homo habilis (about 2 mya), Homo erectus (about 1.5 mya), Neanderthal man (about 1,00,000–40,000 years ago) and finally Homo sapiens. Sequences that put Ramapithecus after Homo, or Homo sapiens at the start, reverse the timeline.

87. Answer: (C) Aptenodytes

Aptenodytes is the penguin, a flightless bird whose forelimbs are modified into flippers (paddles) for swimming. Struthio, the ostrich, is also flightless but is a running bird, while Neophron (vulture) and Psittacula (parrot) can fly.

88. Answer: (C) B, D and E only

Both partners benefit in mutualism, parasitism benefits one species and harms the other, and in amensalism one species is harmed while the other is unaffected, so these three are correct. In commensalism one species benefits and the other is neither harmed nor benefited, so both statements claiming harm or mutual benefit in commensalism are wrong.

Questions as set in the AIPMT/NEET papers conducted by CBSE and NTA. Answers checked and explanations written by the RankUp team. RankUp is not affiliated with CBSE or NTA.