



PAPER  
CODE

**T3**

**NEET UG-2024**  
**[PAPER WITH ANSWER KEY]**

**HELD ON SUNDAY 05<sup>TH</sup> MAY 2024**

**BOTANY**

**SECTION-A**

**[Q.101]** Identify the set of correct statements:

- A. The flowers of Vallisneria are colourful and produce nectar.
- B. The flower of waterlily are not pollinated by water.
- C. In most of water-pollinated species, the pollen grains are protected from wetting.
- D. Pollen grains of some hydrophytes are long and ribbon like.
- E. In some hydrophytes, the pollen grains are carried passively inside water.

Choose the correct answer from the options given below:

- [1] A, C, D and E only
- [2] B, C D and E only
- [3] C, D and E only
- [4] A, B, C and D only

**[ANS]** 2

**[Q.102]** The type of conservation in which the threatened species are taken out from their natural habitat and placed in special setting where they can be protected and given special care is called;

- [1] Semi-conservative method
- [2] Sustainable development
- [3] in-situ conservation
- [4] Biodiversity conservation

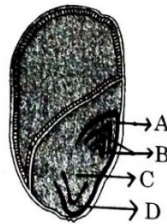
**[ANS]** 4

**[Q.103]** Inhibition of Succinic dehydrogenase enzyme by malonate is a classical example of:

- [1] Competitive inhibition
- [2] Enzyme activation
- [3] Cofactor inhibition
- [4] Feedback inhibition

**[ANS]** 1

**[Q.104]** Identify the part of the seed from the given figure which is destined to form root when the seed germinates.



[1] C

[2] D

[3] A

[4] B

**[ANS]** 2

**[Q.105]** Bulliform cells are responsible for

- [1] Increased photosynthesis in monocots.
- [2] Providing large space for storage of sugars.
- [3] Inward curling of leaves in monocots.
- [4] Protecting the plant from salt stress.

**[ANS]** 2

**[Q.106]** Which of the following are required for the dark reaction of photosynthesis

- A. Light
- B. Chlorophyll
- C. CO<sub>2</sub>
- D. ATP
- E. NADPH

Choose the correct answer from the options given below:

- [1] C,D and E only
- [2] D and E only
- [3] A,B and C only
- [4] B, C and D only

**[ANS]** 2

**[Q.107]** Formation of interfascicular cambium from fully developed parenchyma cells is an example for

- [1] Dedifferentiation
- [2] Maturation
- [3] Differentiation
- [4] Redifferentiation

**[ANS]** 1

**[Q.108]** Hind II always cuts DNA molecules at a particular point called recognition sequence and it consists of:

- [1] 4 bp
- [2] 10 bp
- [3] 8 bp
- [4] 6 bp

**[ANS]** 4

**[Q.109]** Tropical regions show greatest level of species richness because

- A. Tropical latitudes have remained relatively undisturbed for millions of years, hence more time was available for species diversification.
- B. Tropical environments are more seasonal.
- D. Constant environments promote niche specialization.
- E. Tropical environments are constant and predictable.

Choose the correct answer from the options given below:

- [1] A, B and E only
- [2] A, B and D only
- [3] A, C, D and E only
- [4] A and B only

**[ANS]** 3

**[Q.110]** Which one of the following is not a criterion for classification of fungi ?

- [1] Mode of spore formation
- [2] Fruiting body
- [3] Morphology of mycelium
- [4] Mode of nutrition

**[ANS]** 4

**[Q.111]** How many molecules of ATP and NADPH are required for every molecule of CO<sub>2</sub> fixed in Calvin cycle?

- [1] 3 molecules of ATP and 3 molecules of NADPH
- [2] 3 molecules of ATP and 2 molecules of NADPH
- [3] 2 molecules of ATP and 3 molecules of NADPH
- [4] 2 molecules of ATP and 2 molecules of NADPH

**[ANS]** 2

**[Q.112]** These are regarded as major causes of biodiversity loss:

- A. Over exploitation
- B. Co-extinction
- C. Mutation
- D. Habitat loss and fragmentation
- E. Migration

Choose the correct option:

- [1] A, B and E only
- [2] A, B and D only
- [3] A,C and D only
- [4] A, B, C and D only

**[ANS]** 2

**[Q.113]** The capacity to generate a whole plant from any cell of the plant is called:

- [1] Differentiation
- [2] Somatic hybridization
- [3] Totipotency
- [4] Micropropagation

**[ANS]** 3

[Q.114] The equation of Verhulst-Pearl logistic growth is

$$\frac{dN}{dt} = rN \left[ \frac{K - N}{K} \right].$$

From this equation, R indicates:

- [1] Carrying capacity [2] Population density  
[3] Intrinsic rate of natural increase [4] Biotic potential

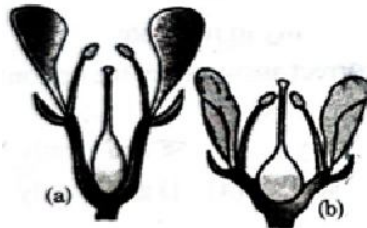
[ANS] 1

[Q.115] Spindle fibers attach to kinetochores of chromosomes during

- [1] Anaphase [2] Telophase [3] Prophase [4] Metaphase

[ANS] 4

[Q.116] Identify the type of flowers based on the position of calyx, corolla and androecium with respect to the ovary from the given figures (a) and (b)



- [1] (a) Perigynous; (b) Epigynous [2] (a) Perigynous; (b) perigynous  
[3] (a) Epigynous; (b) Hypogynous [4] (a) Hypogynous; (b) Epigynous

[ANS] 4

[Q.117] Match List-I with List-II

List-I	List-II
A. Rhizopus	I. Mushroom
B. Ustilago	II. Smut fungus
C. Puccinia	III. Bread mould
D. Agaricus	IV. Rust fungus

Choose the correct answer from the options given below :-

- [1] A-III, B-II, C-I, D-IV [2] A-IV, B-III, C-II, D-I  
[3] A-III, B-II, C-IV, D-I [4] A-I, B-III, C-II, D-IV

[ANS] 3

[Q.118] In a plant, black seed color (BB/Bb) is dominant over white seed color (bb). In order to find out the genotype of the black seed plant, with which of the following genotype will you cross it ?

- [1] Bb [2] BB/Bb [3] BB [4] bb

[ANS] 4

**[Q.119]** A pink flowered Snapdragon plant was crossed with a red flowered shapdragon plant. What type of phenotype/s is/are expected in the progeny ?

- [1] Only pink flowered plants
- [2] Red, Pink as well as white flowered plants
- [3] Only red flowered plants
- [4] Red flowered as well as pink flowered plants.

**[ANS]** 4

**[Q.120]** Match List-I with List-II

List-I	List-II
A. Two or more alternative forms of a gene	I. Back cross
B. Cross of F <sub>1</sub> progeny with homozygous Recessive parent	II. Ploidy
C. Cross of F <sub>1</sub> progeny with any of the parents	III. Allele
D. Number of chromosome sets in plant	IV. Test cross

Choose the correct answer from the options given below :-

- [1] A-III, B-IV, C-I, D-II
- [2] A-IV, B-III, C-II, D-I
- [3] A-I, B-II, C-III, D-IV
- [4] A-II, B-I, C-III, D-IV

**[ANS]** 1

**[Q.121]** Lecithin, a small molecular weight organic compound found in living tissues, is an example of:

- [1] Glycerides
- [2] Carbohydrates
- [3] Amino acid
- [4] Phospholipids

**[ANS]** 4

**[Q.122]** Match List I with List II

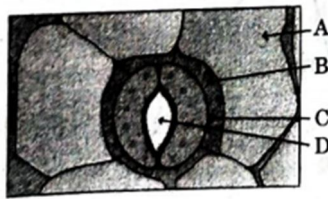
A. Clostridium butylicum	I. Ethanol
B. Saccharomyces cerevisiae	II. Streptokinase
C. Trichoderma polysporum	III. Butyric acid
D. Streptococcus sp.	IV. Cyclosporin-A

Choose the correct answer from the options given below:

- [1] A-III, B-I, C-IV, D-II
- [2] A-IV, B-I, C-III, D-II
- [3] A-III, B-I, C-II, D-IV
- [4] A-II, B-IV, C-III, D-I

**[ANS]** 1

[Q.123] In the given figure, which component has thin outer walls and highly thickened inner walls?



- [1] A                                      [2] B                                      [3] C                                      [4] D

[ANS] 3

[Q.124] Which of the following is an example of actinomorphic flower?

- [1] Pisum                                      [2] Sesbania                                      [3] Datura                                      [4] Cassia

[ANS] 3

[Q.125] A transcription unit in DNA is defined primarily by the three regions in DNA and these are with respect to upstream and down stream end;

- [1] Inducer, Repressor, Structural gene  
 [2] Promotor, Structural gene, Terminator  
 [3] Repressor, Operator gene, Structural gene  
 [4] Structural gene, Transposons, Operator gene

[ANS] 2

[Q.126] What is the fate of a piece of DNA carrying or gene of interest which is transferred into an Alien organism?

- (A) The piece of DNA would be able to multiple itself independently in the progeny cells the organism.  
 (B) It may get integrated into the genome of the recipient.  
 (C) It may multiply and be inherited along would the host DNA.  
 (D) The alien piece of DNA is not an integral part of chromosome.  
 (E) It show ability to replicate.

Choose the correct answer from the options given below:

- [1] B and C only                                      [2] A and E only                                      [3] A and B only                                      [4] D and E only

[ANS] 1

[Q.127] Auxin is used by gardeners to prepare weed-from lawns. But no damage is caused to grass as auxin

- [1] does not affect mature monocotyledon or plants  
 [2] can help in cell division in grasses, to produce growth  
 [3] promotes apical dominance  
 [4] promotes abscission of mature leaves only

[ANS] 1

[Q.128] The cofactor of the enzyme carboxypeptidase is

- [1] Flavin
- [2] Haem
- [3] Zinc
- [4] Niacin

[ANS] 3

[Q.129] The lactose present in the growth medium of bacteria is transported to the cell by action of

- [1] Permease
- [2] Polymerase
- [3] Beta-galactosidase
- [4] Acetylase

[ANS] 3

[Q.130] Which one of the following can be explained on the basis of Mendel's Law of Dominance?

- (A) Out of one pair of factors one is dominant and the other is recessive
- (B) Alleles do not show any expression and both the characters appear as such in F<sub>2</sub> generation
- (C) Factors occur in pairs in normal diploid plants
- (D) The discrete unit controlling a particular character is called factor
- (E) The expression of only one of the parental characters is found in a monohybrid across

Choose the correct answer from the options given below:

- [1] B, C and D only
- [2] A, B, C, D and E
- [3] A, B and C only
- [4] A, C, D and E only

[ANS] 4

[Q.131] Given below are two statements:

**Statement I** : Bt toxins are insect group specific and coded by a gene cry IAc.

**Statement II** : Bt toxin exists as inactive protoxin in *B. thuringiensis*. However, after ingestion by the insect the inactive protoxin gets converted into active form due to acidic pH of the insect gut.

In the light of the above statements, choose the correct answer from the options given below:

- [1] Statement I is true but Statement II is false
- [2] Statement I is false but Statement II is true
- [3] Both Statement I and Statement II are true
- [4] Both Statement I and Statement II are false

[ANS] 1

[Q.132] Given below are two statements :

**Statement I** : Parenchyma is living but collenchymas is dead tissue.

**Statement II** : Gymnosperms lack xylem vessels but presence of xylem vessels is the characteristic of angiosperms.

In the light of the above statements, choose the correct answer from the options given below:

- [1] Statement I is true but Statement II is false
- [2] Statement I is false but Statement II is true
- [3] Both Statement I and Statement II are true
- [4] Both Statement I and Statement II are false

[ANS] 4

[Q.133] Given below are two statements:

**Statement I** : Chromosomes become gradually visible under light microscope during leptotene stage.

**Statement II** : The beginning of diplotene stage is recognized by dissolution of synaptonemal complex.

In the light of the above statements, choose the correct answer from the options given below:

- [1] Statement I is true but Statement II is false
- [2] Statement I is false but Statement II is true
- [3] Both Statement I and Statement II are true
- [4] Both Statement I and Statement II are false

[ANS] 3

[Q.134] Match List - I with List - II

	List - I		List - II
A.	Nucleolus	I.	Site of formation of glycolipid
B.	Centriole	II.	Organization like the cartwheel
C.	Leucoplast	III.	Site for active ribosomal RNA synthesis
D.	Golgi apparatus	IV.	For storing nutrients

Choose the correct answer from the options given below:

- [1] A-III, B-IV, C-II, D-I
- [2] A-I, B-II, C-III, D-IV
- [3] A-III, B-II, C-IV, D-I
- [4] A-II, B-III, C-I, D-IV

[ANS] 3

[Q.135] List of endangered species was released by-

- [1] FOAM
- [2] IUCN
- [3] GEAC
- [4] WWF

[ANS] 2



[Q.136] The DNA present in chloroplast is :

- [1] Linear, single stranded [2] Circular, single stranded  
[3] Linear, double stranded [4] Circular, double stranded

[ANS] 4

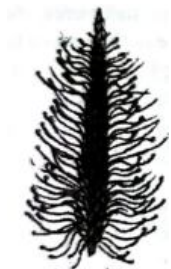
## SECTION-B

[Q.137] Which of the following are fused in somatic hybridization involving two varieties of plants?

- [1] Protoplasts [2] Pollens  
[3] Callus [4] Somatic embryos

[ANS] 1

[Q.138] Identify the correct description about the given figure :



- [1] Cleistogamous flowers showing autogamy.  
[2] Compact inflorescence showing complete autogamy.  
[3] Wind pollinated plant inflorescence showing flowers with well exposed stamens.  
[4] Water pollinated flowers showing stamens with mucilaginous covering.

[ANS] 3

[Q.139] Spraying sugarcane crop with which of the following plant growth regulators, increases the length of stem, thus, increasing the yield?

- [1] Cytokinin [2] Abscisic acid [3] Auxin [4] Gibberellin

[ANS] 4

[Q.140] Match List I with List II

### List I

- A. Frederick Griffith  
B. Francois Jacob & Jacque Monod  
C. Har Gobind Khorana  
D. Meselson & Stahl

### List II

- I. Genetic code  
II. Semi-conservative mode of DNA replication  
III. Transformation  
IV. Lac operon

Choose the correct answer from the option given below :

- [1] A-II, B-III, C-IV, D-I [2] A-IV, B-I, C-II, D-III  
[3] A-III, B-II, C-I, D-IV [4] A-III, B-IV, C-I, D-II

[ANS] 4

[Q.141] Match List I with List II

**List I**

- A. GLUT-4
- B. Insulin
- C. Trypsin
- D. Collagen

**List II**

- i. Hormone
- II. Enzyme
- III. Intercellular ground substance
- IV. Enable glucose transport into cells

Choose the correct answer from the options give below:

- [1] A-II, B-III, C-IV, D-I
- [2] A-III, B-IV, C-I, D-II
- [3] A-IV, B-I, C-II, D-III
- [4] A-I, B-II, C-III, D-IV

[ANS] 3

[Q.142] Given below are two statements:

**Statement I:** In  $C_3$  plants, some  $O_2$  binds RuBisCO, hence,  $CO_2$  fixation is decreased.

**Statement II:** In  $C_4$  plants, mesophyll cells show very little photorespiration while bundle sheath cells do not show photorespiration.

In the light of the above statement choose the correct answer from the options given below:

- [1] Statement I is true but statement II is false
- [2] Statement I is false but Statement II is true
- [3] Both Statement I and statement II are true
- [4] Both statement I and Statement II are false

[ANS] 1

[Q.143] Identify the step in tricarboxylic acid cycle, which do not involve oxidation of substrate.

- [1] Succinyl-CoA  $\rightarrow$  Succinic acid
- [2] Isocitrate  $\rightarrow$   $\alpha$ -ketoglutaric acid
- [3] Malic acid  $\rightarrow$  Oxaloacetic acid
- [4] Succinic acid  $\rightarrow$  Malic acid

[ANS] 1

[Q.144] Match List I with List II

**List I**

- A. Citric acid Cycle
- B. Glycolysis
- C. Electron transport system
- D. Proton gradient

**List II**

- I. Cytoplasm
- II. Mitochondrial matrix
- III. Intermembrane space of mitochondria
- IV. Inner mitochondrial membrane

Choose the correct answer from the options given below:

- [1] A-III, B-IV, C-I, D-II
- [2] A-IV, B-III, C-II, D-I
- [3] A-I, B-II, C-III, D-IV
- [4] A-II, B-I, C-IV, D-III

[ANS] 4

- [Q.145]** Which of the following statement is correct regarding the process of replication in E.Coli?
- [1] The DNA dependent DNA polymerase catalyses polymerization in  $5' \rightarrow 3'$  as well as  $3' \rightarrow 5'$  direction
  - [2] The DNA dependent DNA polymerase catalyses polymerization in  $5' \rightarrow 3'$  direction.
  - [3] The DNA dependent DNA polymerase catalyses polymerisation in one direction that is  $3' \rightarrow 5'$
  - [4] The DNA dependent RNA polymerase catalyses polymerization in one direction that is  $5' \rightarrow 3'$

**[ANS]** 2

- [Q.146]** In an ecosystem if the Net Primary Productivity (NPP) of first trophic level is  $100x \text{ (kcal m}^{-2}\text{) yr}^{-1}$  what would be the GPP (Gross Primary Productivity) of the third trophic level of the same ecosystem?

- [1]  $10x \text{ (kcal m}^{-2}\text{) yr}^{-1}$
- [2]  $\frac{100x}{3x} \text{ (kcal m}^{-2}\text{) yr}^{-1}$
- [3]  $\frac{x}{10} \text{ (kcal m}^{-2}\text{) yr}^{-1}$
- [4]  $x \text{ (kcal m}^{-2}\text{) yr}^{-1}$

**[ANS]** 4

- [Q.147]** Match List I with List II

List I	List II
A. Rose	I. Twisted aestivation
B. Pea	II. Perigynous flower
C. Cotton	III. Drupe
D. Mango	IV. Marginal placentation

Choose the correct answer from the options given below :

- [1] A-IV, B-III, C-II, D-I
- [2] A-II, B-III, C-IV, D-I
- [3] A-II, B-IV, C-I, D-III
- [4] A-I, B-II, C-III, D-IV

**[ANS]** 3

- [Q.148]** Match List I with List II

List I	List II
A. Robert May	I. Species-Area relationship
B. Alexander von Humboldt	II. Long term ecosystem experiment using out Door plots
C. Paul Ehrlich	III. Global species diversity at about 7 million
D. David Tilman	IV. Rivet popper hypothesis

Choose the correct answer from the options given below :

- [1] A-I, B-III, C-II, D-IV
- [2] A-III, B-IV, C-II, D-I
- [3] A-II, B-III, C-I, D-IV
- [4] A-III, B-I, C-IV, D-II

**[ANS]** 4

[Q.149] Match List I with List II

List I (Types of Stamens)	List II (Example)
A. Monoadelphous	I. Citrus
B. Diadelphous	II. Pea
C. Polyadelphous	III. Lilly
D. Epiphyllous	IV. China-rose

Choose the correct answer from the options given below :

[1] A-I, B-II, C-IV, D-III

[2] A-III, B-I, C-IV, D-II

[3] A-IV, B-II, C-I, D-III

[4] A-IV, B-I, C-II, D-III

[ANS] 3

[Q.150] Read the following statements and choose the set of correct statements.

In the members of Phaeophyceae,

- A. Asexual reproduction occurs usually by biflagellate zoospores.
- B. Sexual reproduction is by oogamous method only.
- C. Stored food is in the form of carbohydrates which is either mannitol or laminarin.
- D. The major pigments found are chlorophyll a, c and carotenoids and xanthophyll.
- E. Vegetative cells have a cellulosic wall, usually covered on the outside by gelatinous coating of algin.

Choose the correct answer from the options given below:

[1] A, C, D and E only

[2] A, B, C and E only

[3] A, B, D and D only

[4] B, C, D and E only

[ANS] 1