

Roll No.....

Total No. of Questions : 16]

[Total No. of Printed Pages : 6

11thARNKD(W/Z) JKLUT-2025

1210-C

BIOLOGY

(BOTANY)

Time : 1½ Hours]

[Maximum Marks : 35

Note:- “Attempt any 30 Marks out of 35 Marks”.

SECTION-A

(Objective Type Questions)

(1 mark each)

1. As we move from species to kingdom in a taxonomic hierarchy, the number of common characteristics:

- | | |
|-------------------|------------------------------|
| (a) Will decrease | (b) Will increase |
| (c) Remain same | (d) May increase or decrease |

11thARNKD(W/Z) JKLUT-25-1210-C

Turn Over

2. Which of the following is a prokaryote?

- (a) *Amoeba*
- (b) *Bacteria*
- (c) *Spirogyra*
- (d) *Euglena*

3. Arrangement of sepals or petals in a flower bud of a plant is called:

- (a) *Phyllotaxy*
- (b) *Aestivation*
- (c) *Placentation*
- (d) *Inflorescence*

4. Conjoint, and open vascular bundles are found in:

- (a) Monocot stem
- (b) Monocot root
- (c) Dicot stem
- (d) Dicot root

5. Primary CO_2 acceptor in C_3 plants is:

- (a) PEP
- (b) Oxaloacetate
- (c) 3 - PGA
- (d) RuBP

SECTION-B

(Very Short Answer Type Questions)

(2 marks each)

6. Describe the structural components of *Lichens*.
7. What is ICBN? What is its purpose?
8. Differentiate between Brown Algae and Red Algae on the basis of pigments and stored food.
9. Give any two differences between the vascular bundles of monocot stem and dicot stem.
10. Differentiate between Endarch and Exarch Condition.

SECTION-C

(Short Answer Type Questions)

(3 marks each)

11. Write down the universal rules for Binomial nomenclature.
12. What are the salient features of Kingdom Monera?
13. What criteria were used by Whittaker to classify organisms into five Kingdoms? <https://www.jkbboseonline.com>
14. Define Respiratory Quotient. What is its value for different substrates?
15. Name various plant growth promoters. List the uses of any one of them.

SECTION-D

(Long Answer Type Questions)

(5 marks)

16. Give a schematic account of Glycolysis. Where does it occur?

OR

Describe non-cyclic photophosphorylation in plants.

Roll No.

Z-10-A

Total No. of Questions : 16]

[Total No. of Printed Pages : 4

11th ARF(SZ)JKUT2024-25

210-A

BOTANY

(BIOLOGY)

Time : 1½ Hours]

[Maximum Marks : 35

Section-A

1 each

(Very-Very Short Answer Type Questions)

1. Define taxa.
2. Root hairs originate from :

(A) Meristematic zone

(B) Elongation zone

(C) Maturation zone

(D) Both (A) and (B)

11th ARF(SZ)JKUT2024-25

210-A

Turn Over

Z-10-A

3. Which of the following is not the part of Ground tissue system ?
- (A) Epidermis
 - (B) Cortex
 - (C) Endodermis
 - (D) Pericycle
4. Which of the following is a mobile electron carrier ?
- (A) Cytochrome 'a'
 - (B) Cytochrome 'a₃'
 - (C) Cytochrome 'c'
 - (D) Cytochrome 'b'
5. A hormone which helps to initiate rooting in stem cuttings is :
- (A) Auxins
 - (B) Gibberellins
 - (C) Cytokinins
 - (D) Ethylene

Section-B

2 each

(Very Short Answer Type Questions)

6. Write down two important features of Lichens.
7. How is anisogamous reproduction different from oogamous reproduction ?
8. What are the different components of stomatal apparatus ?
9. Give two differences between radial and conjoint vascular bundles.
10. Define respiratory quotient (RQ). What is the RQ of carbohydrates ?

Section-C

3 each

(Short Answer Type Questions)

11. Write a note on the nutrition of bacteria with emphasis on saprotrophic nutrition. <https://www.jkboseonline.com>
12. Describe the different steps of sexual reproduction in fungi.
13. Discuss the different types of asexual spores found in algae.
14. Write a short note on the structure of a dicot seed.
15. Give an account of the differences between arithmetic and geometric growth in plants.

11th ARF(SZ)JKUT2024-25

210-A

Turn Over

Z-10-A

Section-D

(Long Answer Type Questions)

Give the diagrammatic representation of Hatch and Slack cycle.

Or

Discuss in detail the different steps of Calvin Cycle with the help of schematic representation.

Roll No.

Z-10-B

Total No. of Questions : 16]

[Total No. of Printed Pages : 4

11th ARF(SZ)JKUT2024-25

210-B

BOTANY

(BIOLOGY)

Time : 1½ Hours]

[Maximum Marks : 35

Section-A

1 each

(Very-Very Short Answer Type Questions)

1. What do you mean by a rank in taxonomy ?
2. The green expanded part of the leaf with veins and veinlets is called :

(A) Petiole

(B) Leaf base

(C) Stipule

(D) Lamina

11th ARF(SZ)JKUT2024-25

210-B

Turn Over

Z-10-B

3. Bulliform cells are present in :
- (A) Monocot Leaves
 - (B) Dicot Leaves
 - (C) Monocot Stem
 - (D) Dicot Stem
4. Glycolysis occurs in :
- (A) Mitochondria
 - (B) Cytoplasm
 - (C) Peroxisomes
 - (D) Chloroplast
5. A hormone which is highly effective in fruit ripening is :
- (A) Gibberellic acid
 - (B) Cytokinins
 - (C) Abscissic acid
 - (D) Ethylene

Section-B

2 ea

(Very Short Answer Type Questions)

6. What are viroids and what is their chemical nature ?
7. Give *two* important differences between a gametophyte and sporophyte in bryophytes.
8. Write down *three* important features of trichomes.
9. Give *two* differences between radial and conjoint vascular bundles.
10. Define respiratory quotient (RQ). What is the RQ of carbohydrates ?

Section-C

3 ea

(Short Answer Type Questions)

11. Write a note on the nutrition of bacteria with emphasis on saprotrophic nutrition. <https://www.jkboseonline.com>
12. Describe the different steps of sexual reproduction in fungi.
13. Discuss the different types of asexual spores found in algae.
14. Write a short note on the structure of a dicot seed.
15. Give an account of the differences between arithmetic and geometric growth in plants.

Section-D

5

(Long Answer Type Questions)

16. Give the diagrammatic representation of Hatch and Slack cycle.

Or

Discuss in detail the different steps of Calvin Cycle with the help of a schematic representation.

Total No. of Questions : 16]

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11th ARF(SZ)JKUT2024-25**210-C****BOTANY****(BIOLOGY)**

Time : 1½ Hours]

[Maximum Marks : 35

Section-A

1 each

(Very-Very Short Answer Type Questions)

1. Define species.
2. In opposite phyllotaxy :
 - (A) Two leaves arise at each node
 - (B) One leaf arises at each node
 - (C) More than two leaves arise at each node
 - (D) One or two leaves arise at each node

11th ARF(SZ)JKUT2024-25**210-C**

Turn Over

Z-10-C

Section-B

(Very Short Answer Type Questions)

6. Write down two salient features of viruses.
7. How is artificial classification different from natural classification ?
8. Write down two main differences in the anatomy of monocot and dicot roots.
9. Give two differences between radial and conjoint vascular bundles ?
10. Define respiratory quotient (RQ). What is the RQ of carbohydrates ?

Section-C

3

(Short Answer Type Questions)

11. Write a note on the nutrition of bacteria with emphasis on saprotrophic nutrition. <https://www.jkboseonline.com>
12. Describe the different steps of sexual reproduction in fungi.
13. Discuss the different types of asexual spores found in algae.
14. Write a short note on the structure of a dicot seed.
15. Give an account of the differences between arithmetic and geometric growth in plants.

Section-D

(Long Answer Type Questions)

16. Give the diagrammatic representation of Hatch and Slack cycle.

Or

Discuss in detail the different steps of Calvin Cycle with the help of a schematic representation.

Roll No.

Y-10-C

Total No. of Questions : 16]

[Total No. of Printed Pages : 4

11thARM(H/Z)JKUTL2024-25

510-C

BOTANY

(BIOLOGY)

Time : 1½ Hours]

[Maximum Marks : 35

Section-A

1 each

(Very Very Short Answer Type Questions)

1. Phylogenetic classification is based on :

(A) Utility of organisms

(B) Habits of organisms

(C) Similarities of organisms

☒ (D) Common evolutionary descent

11thARM(H/Z)JKUTL2024-25-510-C

Turn Over

Y-10-C

2. First vascular plant is :
- (A) Bryophyta
 - ☒ (B) Pteridophyta
 - (C) Gymnosperm
 - (D) Angiosperm
3. Companion cells are closely associated with :
- ☒ (A) Sieve elements
 - (B) Vessels
 - (C) Trichomes
 - (D) Guard cells
4. Electron transport system is located in mitochondrial :
- (A) Outer membrane
 - ☒ (B) Inner membrane
 - (C) Inter membrane space
 - (D) Matrix

5. In C_4 pathway the CO_2 fixation in mesophyll cells is carried out by the enzyme :

(A) Pyruvate dehydrogenase

(B) Pyruvate decarboxylase

(C) RUBISCO

(D) PEP carboxylase

Section-B

2 each

(Very Short Answer Type Questions)

6. What are the salient features of Viruses ?

7. What are the characteristics of racemose inflorescence ?

8. Give two differences between the vascular bundles of monocot and dicot stems. <https://www.jkboseonline.com>

9. Why there is secondary growth in dicots and no such growth in monocots ?

10. Differentiate between differentiation and re-differentiation.

Section-C

3 each

(Short Answer Type Questions)

11. What are the advantages of five kingdom classification over the two kingdom classification ?

12. Write salient features of kingdom Monera.
13. Describe the general characters of seedless vascular plants.
14. Why bryophytes are called amphibians of plant kingdom ?
15. Explain the physiological effects of Auxins.

Section-D

(Long Answer Type Question)

16. Explain major steps of glycolysis. Where does this process occur in a cell ?

Or

What are the important events and end products of photophosphorylation ?

11thARM(H/Z)JKUTL2024-25-510-C

Y-10-C

Roll No.....

Total No. of Questions : 16+14]

[Total No. of Printed Pages : 8

11thAP B.A JKLUT 2025

910-C

BIOLOGY

(Botany)

(New/Old Course)

Time : 1½ Hours]

[Maximum Marks : 35

NOTE :- The questions in the question paper are based on revised and pre-revised syllabus marked as "New Course" and "Old Course", respectively and candidates are advised to appear in the relevant course meant for them. Candidates who may attempt the questions partly from "New Course" and partly from "Old Course" will not be awarded. Candidates are also advised to record "New Course", or "Old Course" as the case may be, on the front page of the answer-book.

11thAP B.A JKLUT 25-910-C

Turn Over

(New Course)

SECTION-A

(1 mark each)

1. Biosynthetic phase of photosynthesis is dependent on :
 - (a) ATP
 - (b) NADPH
 - ~~(c)~~ Both (a) and (b)
 - (d) None of the above

2. Conjoint vascular bundles have phloem :
 - ~~(a)~~ Located only on the outer side of Xylem
 - (b) Located only on the inner side of Xylem
 - (c) Located on the both sides of Xylem
 - (d) Arranged along with Xylem in an alternate manner along different radii

3. Which of the following is not a characteristic of *Bryophyta*?

- (a) No true leaves or roots
- (b) Dominant gametophytic phase
- ☒ (c) Presence of vascular bundle
- (d) Require water for fertilization

4. Cytokinin does not help in :

- (a) Lateral shoot growth
- (b) Over coming apical dominance
- ☒ (c) Adventitious root formation
- (d) Promoting leaf senescence

5. Protozoans are classified on the basis of :

- (a) Their mode of nutrition
- (b) Their mode of respiration
- ☒ (c) Their mode of locomotion
- (d) All the above

Turn Over

SECTION-B

(2 marks each)

6. How can you identify a Monocot stem and Dicot stem?
7. The rate of photosynthesis decreases at higher temperature. Why?
8. Draw floral formula and floral diagram of family solanaceae.
9. Describe ground tissue system.
10. What similarities do a virus and non-living objects share?

SECTION-C

(3 marks each)

11. Write a note on Phyllotaxy.
12. Cyanobacteria and heterotrophic bacteria are very different from each other but all under Eubacteria of the kingdom Monera. Justify this type of grouping.

[5]

13. Compare fermentation and aerobic respiration.
14. Differentiate between species and genus.
15. Draw a well labelled diagram of V.S. of maize seed

SECTION-D

(5 marks each)

16. List five (05) main groups of plant growth regulators. Write a note on discovery, Physiological functions and applications of Auxin.

OR

Explain Electron transport system.

Turn Over

[6]

(Old Course)

Time : 1½ Hours]

[Maximum Marks : 35

SECTION-A

(5 marks each)

1. What is Placentation? Describe the various types of placentations found in flowering plants.

OR

Why are gymnosperms and angiosperms classified separately? Draw a Schematic representation of life cycle of gymnosperms.

2. Explain in detail biological Nitrogen fixation with emphasis on nodule formation. <https://www.jkboseonline.com>

OR

Give a detailed account of Krebs cycle with illustration.

[7]

SECTION-B

(3 marks each)

3. Describe briefly the four major groups of protozoa.
4. What is Taxonomic Key? How is it useful in the identification and classification of an organism?
5. Write a short note on the economic importance of Algae.
6. Give a brief account of Root pressure theory.
7. Why is abscisic acid also called as stress hormone.

SECTION-C

(2 mark each)

8. What are the different steps in the sexual reproduction in Fungi.
9. Differentiate between spring wood and autumn wood.
10. What are Poring? What role do they play in diffusion?

SECTION-D

(1 mark each)

11. Epitepalous condition is found in
 - (a) Fabaceae
 - (b) Liliaceae
 - (c) Solanaceae
 - (d) Brassicaceae
12. Name the dead mechanical tissue in plants.
13. In addition to Chlorine, name the elements involved in water splitting during the process of Photosynthesis.
14. What is the temperature optimum for C_3 Plants?
