
NEET BIOLOGY 2018-19 - Chennai

Periodic Test : 13

Test ID : 025

Number of questions: 150

Test date: 02.04.2019

Name: _____

Time: 3HRS

ID No: _____

Negative Marks : 4 marks for correct attempt & 1 mark deducted for every wrong attempt.

1. With reference to factors affecting the rate of photosynthesis, which of the following Statements is not correct?

- (a) Increasing atmospheric CO_2 concentration up to 0,05% can enhance CO_2 fixation rate
- (b) C_3 plants respond to higher temperature with enhanced photosynthesis while C_4 plants have much lower temperature optimum.
- (c) Tomato is a greenhouse crop which can be grown in CO_2 -enriched atmosphere for higher yield.
- (d) Light saturation for CO_2 fixation occurs at 10% of full sunlight.

2. Phosphoenol pyruvate (PEP) is the primary CO_2 acceptor in

- (a) C_4 plants
- (b) C_2 plants
- (c) C_3 and C_4 plants
- (d) C_3 plants

3. The process which makes major difference between C_3 and C_4 plant is

- (a) glycolysis
- (b) Calvin cycle
- (c) photo respiration
- (d) respiration

4. Water vapour comes out from the plant leaf through the stomatal opening. Through the same stomatal opening carbon dioxide diffuses into the plant during photosynthesis, Reason out the above statements using one of following options.

- (a) The above processes happen only during night time.
- (b) One process occurs during day time and the other at night.
- (c) Both processes cannot happen simultaneously.
- (d) Both processes can happen together because the diffusion coefficient of water and CO_2 is different

5. In chloroplast the highest number of protons are found in

- (a) Intermembrane space
- (b) antennae complex
- (c) stroma
- (d) Lumen of thylakoids.

6. Emerson's enhancement effect and Red drop have been instrumental in the discovery of

- (a) Photophosphorylation and cyclic electron transport
- (b) Oxidative phosphorylation
- (c) Photophosphorylation and non-cyclic electron transport
- (d) Two photo systems operating simultaneously.

7. A plant in your garden avoids photorespiratory losses, has improved water use efficiency, shows high rates of photosynthesis at high temperatures and has improved efficiency of nitrogen utilisation. In which of the following physiological groups would you assign this plant?

- (a) CAM
- (b) Nitrogen fixer
- (c) C₃
- (d) C₄

8. Water soluble pigments found in plant cell vacuoles are

- (a) Carotenoids
- (b) Anthocyanins
- (c) Xanthophylls
- (d) Chlorophylls.

9. In photosynthesis, the light-independent reactions take place at

- (a) photosystem II
- (b) stromal matrix
- (c) thylakoid lumen
- (d) photosystem I

10. Chromatophores take part in

- (a) Movement
- (b) Respiration
- (c) Photosynthesis
- (d) Growth.

11. A process that makes important difference between C₃ and C₄ plants is

- (a) transpiration
- (b) glycolysis
- (c) photosynthesis
- (d) photorespiration

12. The correct sequence of cell organelles during photorespiration is

- (a) chloroplast, Golgi-bodies, mitochondria
- (b) chloroplast, rough endoplasmic reticulum, dictyosomes
- (c) chloroplast, mitochondria, peroxisome
- (d) chloroplast, vacuole, peroxisome.

13. Read the following four statements (A -- D).

- (a) Both photophosphorylation and oxidative phosphorylation involve uphill transport of protons across the membrane,
- (b) In dicot stems, a new cambium originates from cells of pencycle at the time of secondary growth.
- (c) Stamens in flowers of Gloriosa and Petunia are polyandrous.
- (d) Symbiotic nitrogen fixers occur in free- living state also in son.

14. How many of the above statements are right?

- (a) Two
- (b) Three
- (c) Four
- (d) One

15. CAM helps the plants in

- (a) conserving water
- (b) secondary growth
- (c) disease resistance
- (d) reproduction

16. In kranz anatomy, the bundle sheath cells have

- (a) thin walls, many intercellular spaces and no chloroplasts
- (b) thick walls, no inter cellular spaces and large number of chloroplasts
- (c) think walls‘ no intercellular spaces and several chloroplasts
- (d) thick walls, many intercellular spaces and few chloroplasts.

17. Which one of the following is essential for photolysis of water?

- (a) Manganese
- (b) Zinc
- (c) Copper
- (d) Boron

18. PGA as the first CO₂ fixation product was discovered in photosynthesis of

- (a) bryophyte
- (b) gymnosperm
- (c) angiosperm
- (d) alga,

19. C_4 plants are more efficient in photosynthesis than C_3 plants due to

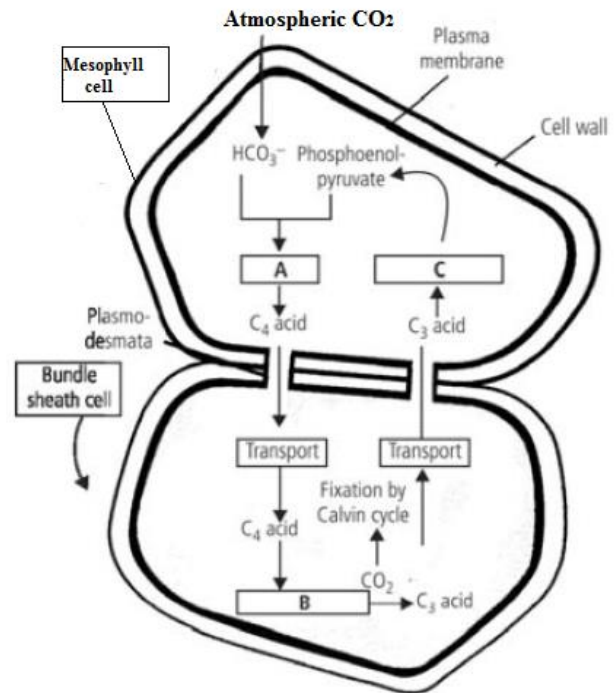
- (a) higher leaf area
- (b) presence of larger number of chloroplasts in the leaf cells
- (c) presence of thin cuticle
- (d) lower rate of photorespiration

20. Read the following four statements, (i), (ii), (iii) and (iv) and select the right option having both correct statements.

- (i) Z scheme of light reaction takes place in presence of PSI only;
- (ii) Only PSI is functional in cyclic photophosphorylation.
- (iii) Cyclic photophosphorylation results into synthesis of ATP and NADPH₂.
- (iv) Stroma lamellae lack PSII as well as NADP.

- (a) (ii) and (iv)
- (b) (i) and (ii)
- (c) (ii) and (iii)
- (d) (iii) and (iv)

21. Study the pathway give below:



In which of the following options correct words for all the three blanks A, B and C are indicated?

A	B	C
a) Decarboxylation	Reduction	Regeneration
b) Fixation	Transaminaton	Regeneration
c) Fixation	Decarboxylation	Regeneration
d) corboxylation	Decarboxylation	Reduction

22. Kranz anatomy is one of the characteristics of the leaves of

- (a) Potato
- (b) Wheat
- (c) Sugarcane
- (d) Mustard

23. Cyclic photophosphorylation results in the formation of

- (a) ATP and NADPH
- (b) ATP, NADPH and O₂
- (c) ATP
- (d) NADPH.

24. Stroma in the chloroplasts of higher plant contains

- (a) light-dependent reaction enzymes
- (b) ribosome
- (c) chlorophyll
- (d) Light-independent reaction enzymes.

25. Electrons from excited chlorophyll molecule of photosystem II are accepted first by

- (a) quinone
- (b) ferredoxin
- (c) cytochrome- b
- (d) cytochrome-f

26. The C₄ plants are photosynthetically more efficient than C₃ plants because

- (a) the CO₂ efflux is not prevented
- (b) they have more chloroplasts
- (c) the CO₂ compensation point is more
- (d) CO₂ generated during photorespiration is trapped and recycled through PEP carboxylase.

27. In C₄ plants, CO₂ fixation is done by

- (a) sclerenchyma
- (b) chlorenchyma and hypodermis
- (c) mesophyll cells
- (d) guard cells.

28. The primary acceptor, during CO₂ fixation in C₃ plants, is

- (a) Phosphoenolpyruvate (PEP)
- (b) ribulose 1, 5.diphosphate (RuDP)
- (c) Phosphoglyceric acid (PGA)
- (d) Ribulose monophosphate (RMP).

29. The CO₂ fixation during C₄ pathway occurs in the chloroplast of

- (a) guard cell s
- (b) bundle sheath cells
- (c) mesophyll cells
- (d) spongy parenchyma.

30. Which of the following pigments acts as a reaction-centre during photosynthesis?

- (a) Carotene
- (b) Phytochrome
- (c) P₇₀₀
- (d) Cytochrome

31. During light reaction of photosynthesis, which of the following phenomenon is observed during cyclic phosphorylation as well as non-cyclic phosphorylation?

- (a) Release of O_2
- (b) Formation of ATP
- (c) Formation of NADPH
- (d) Involvement of PS I and PS II pigment systems

32. A photosynthesising plant is releasing ^{18}O more than the normal, The plant must have been supplied with

- (a) O_3
- (b) H_2O with ^{18}O
- (c) CO_2 with ^{18}O
- (d) $C_6H_{12}O_6$ with ^{18}O .

32. Maximum solar energy is trapped by

- (a) planting trees
- (b) cultivating crop
- (c) growing algae in tanks
- (d) growing grasses,

33. The carbon dioxide acceptor in Calvin cycle/ C_3 -plants is

- (a) phosphoenol pyruvate (PEP)
- (b) ribulose 1, 5-diphosphate (RuDP)
- (c) phosphoglyceric acid (PGA)
- (d) ribulose monophosphate (RMP).

34. Which one is a C_4 plant?

- (a) Papaya
- (b) Pea
- (c) Potato
- (d) Maize/corn

35. Chlorophyll a occurs in

- (a) all photosynthetic autotrophs
- (b) in all higher plants
- (c) all oxygen liberating autotrophs
- (d) all plants except fungi.

36. Photo steps II occurs in

- (a) stroma
- (b) cytochrome
- (c) grana
- (d) mitochondrial surface,

37. The enzyme that catalyses carbon dioxide fixation in C_4 plants is

- (a) RuBP carboxylase
- (b) PEP carboxylase
- (c) carbonic anhydrase
- (d) carboxydismutase.

38. The first carbon dioxide acceptor in C_4 -plants is

- (a) phosphoenol-pyruvate
- (b) ribulose 1, 5-diphosphate
- (c) oxaloacetic acid
- (d) Phosphoglyceric acid.

39. Ferredoxin is a constituent of

- (a) PS I
- (b) PS II
- (c) Hill reaction
- (d) P^{680}

40. During monsoon the rice crop of eastern states of India shows lesser yield due to limiting factor of

- (a) CO₂
- (b) Light
- (c) Temperature
- (d) Water.

41. Which technique has helped in investigation of Calvin cycle?

- (a) I-ray crystallography
- (b) X-ray technique
- (c) Radioactive isotope technique
- (d) Intermittent light

42. Dark reactions of photosynthesis occur in

- (a) granal thylakoid membranes
- (b) stromal lamella membranes
- (c) stroma outside photosynthetic lamellae
- (d) periplastidial space

43. Photosynthetic pigments found in chloroplasts occur in

- (a) thylakoid membranes
- (b) plastoglobul es
- (c) matrix
- (d) chloroplast envelope.

44. Kranz anatomy is typical of

- (a) C₄ plants
- (b) C₃ plants
- (c) C₂ plants
- (d) CAM Plants

45. A very efficient converter of solar energy with net productivity of 204 kg/m² or more is the crop

- (a) wheat
- (b) sugarcane
- (c) rice
- (d) bajra.

46. In C₄ plants, Calvin cycle operates in

- (a) Stroma of bundle sheath chloroplasts
- (b) Grana of bundle sheath chloroplasts
- (c) Grana of mesophyll chloroplasts
- (d) Stroma of mesophyll chloroplasts.

47. The substrate for photorespiration is

- (a) Phosphoglyceric acid
- (b) Glycolate
- (c) Serine
- (d) Glycine.

48. The size of chlorophyll molecule is

- (a) head 15 x 15 A, tail 25 A
- (b) head 20 x 20 A, tail 25 A
- (c) head 15 x 15 A, tail 20 A
- (d) head 10 x 12 A, tail 25 A

49. NADP⁺ is reduced to NADPH in

- (a) Ps I
- (b) PS II
- (c) Calvin cycle
- (d) Noncyclic photophosphorylation

50. Carbon dioxide joins the photosynthetic pathway in

- (a) PST I
- (b) PS II
- (c) light reaction
- (d) dark reaction