Self Practice Paper (SPP)

1. Select the wrong pair

(1) C_4 cycle – Dimorphic Chloroplasts

(2) C_3 cycle – *Chlorella* & *Scenedesmus*

(3) Alcoholic fermentation – Production of NADH-H^+

(4) Oxidative decarboxylation of pyruvic acid – Formation of CO_2 & acetyl CO~A

2. Which one releases CO_2?

(1) Glycolysis (2) ETS

(3) Alcoholic fermentation (4) Lactic acid fermentation

3. Select the correct matching of the characteristics in respect of C_3 and C_4 plants

	Characteristic	**C_3 plant**	**C_4 plant**
A	Primary CO_2 acceptor	RUBP	PEP
B	Occurence of Rubisco	Bundle sheath	Mesophyll
C	Primary CO_2 fixation product	PGA	OAA
D	No. of ATP & NADPH·H^+ required for the synthesis of 1 molecule of glucose	18 & 12	30 & 12

(1) b, c, d (2) a, b,c (3) a, c, d (4) b & d

4. When one molecule of pyruvic acid is subjected to anaerobic respiration changed into Lactic acid there is a

(1) Loss of 6 ATP (2) Loss of 3 ATP (3) Gain of 2 ATP (4) Gains of 3 ATP

5. ATP formation is

(1) Enderogonic (endothermic) (2) Exerogonic (exothermic)

(3) Conservative (4) Chemical

6. RQ is measured with Ganong's respiroscope. If in its Hg level remains constant during experiment, the RQ value comes to unit. When it shows rise in Hg level the

(1) Value of RQ will be 0 (2) Value of RQ will be <1

(3) RQ value will be unity (4) RQ value will be infinity

7. The first action spectrum was suggested by Engelmann by using –

(1) Chlorella and anaerobic bacteria (2) Spirogyra and anaerobic bacteria

(3) Cladophora and aerobic bacteria (4) Chlorella and aerobic bacteria

8. Among the following, which compound links glycolysis and Kreb's cycle–

(1) Acetyl - Co.A (2) Pyruvic acid (3) Glucose (4) Oxaloacetic acid

9. Which of the following statement is correct?
(1) Cyclic photophosphorylation produces neither oxygen nor NADPH.
(2) The site of the light reactions is the stroma of the chloroplast.
(3) Light is absorbed by chlorophyll during Calvin Cycle.
(4) FADH and ATP are generated during the Light reaction to power the Calvin Cycle.

10. Importance of day length in flowering of plants was first shown in –
(1) Lemna. (2) Tobacco (3) Cotton (4) Petunia

11. Read the following four statements (i), (ii), (iii) and (iv) and select the right option
Statements:
(i) Z scheme of light reaction takes place in presence of PS I only
(ii) Only PS I is functional in cyclic photophosphorylation.
(iii) Plastocyanin is electron carrier in noncyclic electron transport chain only
(iv) Stroma lamellae lack PS II as well as NADP.
(1) (ii) & (iv) (2) (i) & (ii) (3) (ii) & (iii) (4) (iii) & (iv)

12. Which of the following hormones can replace vernalisation?
(1) auxin (2) cytokinin (3) gibberellin (4) ethylene

13. Which is incorrect pair
(1) Auxin – xylem differentiation (2) Gibberellins – Bolting in beet & cabbage
(3) Zeatin – Cell division (4) ABA – Adenine derivatives

14. Exponential growth is maximum in
(1) tissue culture cells (2) embryo
(3) unicellular organisms (4) multicellular organisms

15. Bidirectional translocation of minerals takes place through
(1) Xylem (2) Phloem (3) Parenchyma (4) Cambium

16. Anaerobic process after glycolysis is called
(1) TCA (2) Calvin cycle (3) Krebs cycle (4) Fermentation

17. Minerals involved in photo oxidation of water is
(1) Mn, Cl, Ca (2) Mg, Fe, Mn (3) Mn, Fe, Ca (4) N, P, K

18. Phytochrome becomes active in
(1) Green light (2) Blue light (3) Red light (4) None of these

19. The growth hormones responsible for bolting are
(1) Auxins (2) Kinetin (3) Coumarins (4) Gibberellins

20. Weedcide 2, 4 - D is
(1) Pesticide (2) Growth inhibitor hormone
(3) Auxin (4) Insecticide

21. Enzyme absent in mitochondrion
(1) Aconitase (2) Fumarase (3) Hexokinase (4) Malic dehydrogenase

22. How many ATP are formed in ETS from reduced NAD generated in one turn cycle of Kreb's Cycle?

(1) 3 (2) 6 (3) 12 (4) 9

23. In Bacteria, organelle concerned with respiration is

(1) Episome (2) Plasmid (3) Mesosome (4) Cytoplasm

24. Which of the following inhibits electron flow from cyt b to cyt c_1?

(1) Rotenone (2) Antimycin A (3) Cyanide (4) Azide

25. Choose the correct statement

(1) Respiration is carried out by only leaf cells

(2) End product of anaerobic respiration is CO_2 + Pyruvic acid

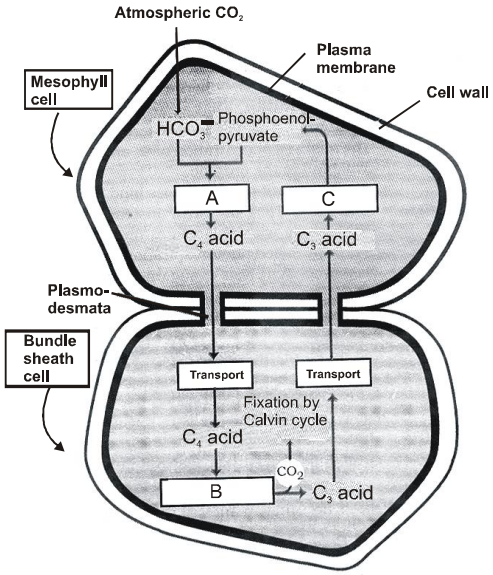
(3) Substrate level phosphorylation occurs when α-ketoglutaric acid changes to succinic acid

(4) Dark respiration in plants occurs only in night

26. The inhibition of sugar break down due to presence of O_2 under anaerobic condition is called

(1) Hill's effect (2) Pasteur's effect (3) Warburg effect (4) Dixon's effect

27.# Study the pathway given below C_4 cycle diagram



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

	A	B	C
(1)	Carboxylation	Decarboxylation	Reduction
(2)	Decarboxylation	Reduction	Regeneration
(3)	Fixation	Transamination	Regeneration
(4)	Fixation	Decarboxylation	Regeneration

28. The products of light reaction are-

(1) ATP, NADH $+H^+$ (2) NADPH$+H^+$, ATP, CO_2

(3) Glucose, ATP, O_2 (4) O_2, NADPH$+H^+$, ATP

29. Chemiosmotic theory of ATP synthesis in chloroplasts and mitochondria is based on

(1) Membrane potential (2) accumulation of Na^+ ions

(3) Accumulation of K^+ions (4) Proton gradient

30. When yeast ferments glucose, the products are

(1) $C_2H_5OH + CO_2$ + Energy (2) C_2H_5OH+ Energy

(3) $CO_2 + H_2O$ + Energy (4) $CH_3 OH + H_2O$ + Energy

31. In how many steps is CO_2 produced in aerobic respiration

(1) 1 (2) 2 (3) 3 (4) 6

32. Upon oxidation of 1 molecule of pyruvic acid in mitochondrial respiration the molecules of ATP generated are

(1) 38 (2) 30 (3) 8 (4) 15

33. How much energy is conserved as ATP per mole of O_2 reduced into H_2O?

(1) 36 (2) 38

(3) 6 (4) 36 in eukaryotes and 38 in prokaryotes.

34. In kreb's cycle

(1) Acetyl coenzyme A undergoes 4 oxidation and 2 decarboxylation

(2) Pyruvic acid undergoes 4 oxidation and 2 decarboxylation

(3) TCA undergoes 4 oxidation and 2 decarboxylation

(4) OAA undergoes 4 oxidation and 2 decarboxylation.

35. Wavelength of PAR is

(1) 200 – 400 nm (2) 400 – 700 nm (3) 700 – 900 nm (4) 100 – 200 nm

36. 3 PGA is first stable product of

(1) Carbon oxidation cycle (2) Carbon reduction cycle

(3) Reductive amination (4) Malic acid synthesis

37. Match the column

Column-I	**Column-II**
(a) Carboxylation	(i) Oxygen evolution
(b) Photolysis of water	(ii) Photorespiration
(c) Phosphoglycolate	(iii) Rubisco
(d) Nitrosomonas	(iv) Chemosynthesis
(e) Photophosphorylation.	(v) ATP

(1) (a) – i (b) – ii (c) – iii (d) – iv (e) – v

(2) (a) – iii (b) – i (c) – ii (d) – v (e) – iv

(3) (a) – iii (b) – ii (c) – v (d) – iv (e) –i

(4) (a) – v (b) – iii (c) – iv (d) – ii (e) –i

38. Germination of peanut seed is initiated by

(1) GA (2) Cytokinin (3) IBA (4) Ethylene

39. Match the phytohormones given in Column-I with their functions given in Column-II. Choose the answer with correct combination of alphabets of the two column

Column-I (Phytohormones)	**Column-II** (Function)
(A) Auxins	(p) Breaking seed dormancy
(B) Gibberellins	(q) inducing fruit ripening
(C) Cytokinins	(r) Formation of abscission layer
(D) Ethylene	(s) Root initiation
	(t) Chloroplast development and chlorophyll synthesis

(1) A = r, B = s, C = p, D = t (2) A = p, B = r, C = q, D = s

(3) A = s, B = t, C = r, D = q (4) A = s, B = p, C = t, D = q

40. Read the following statements carefully

(a) Photorespiration protects the plant from photo oxidative damage by dissipating excess of excitation energy.

(b) Above 40ºC the rate of respiration become high

(c) Substrate level phosphorylation generates 8 ATP in Glycolysis

(d) Retting of stem fibres is carried out with the help of bacterial fermentation of softer tissues

pick up the correct statements

(1) b & d (2) a & c (3) a & d (4) b & c

41. How many molecules of glycine are required to release one molecule of CO_2 in photorespiration?

(1) One (2) Two (3) Three (4) Four

42. A hormone involved in low temperature effect on flowering is

(1) Florigen (2) Vernalin (3) dormin (4) Anthesin

43. Which of the following is not a function of auxin

(1) To increase the rate of respiration (2) To increase the rate of photosynthesis

(3) To increase the plasticity of cell wall (4) To increase the uptake of water by cells

44. Which of the following are day neutral plants

(1) *Mirabilis, Lycopersicum esculentum* and *Pisum sativum*

(2) *Glycine max* and *Mirabilis*

(3) *Lycopersicum esculentum* and *Beta vulgaris*

(4) *Glycine max* and *Pisum sativum*

45. In plants, substrate level phosphorylation in a kreb cycle produces

(1) 2ATP (2) 4 ATP (3) no ATP (4) 1 ATP

SPP Answers

1.	(3)	**2.**	(3)	**3.**	(3)	**4.**	(2)	**5.**	(1)	**6.**	(2)	**7.**	(3)
8.	(1)	**9.**	(1)	**10.**	(2)	**11.**	(1)	**12.**	(3)	**13.**	(4)	**14.**	(1)
15.	(2)	**16.**	(4)	**17.**	(1)	**18.**	(3)	**19.**	(4)	**20.**	(3)	**21.**	(3)
22.	(4)	**23.**	(3)	**24.**	(2)	**25.**	(3)	**26.**	(2)	**27.**	(4)	**28.**	(4)
29.	(4)	**30.**	(1)	**31.**	(3)	**32.**	(4)	**33.**	(3)	**34.**	(1)	**35.**	(2)
36.	(2)	**37.**	(2)	**38.**	(4)	**39.**	(4)	**40.**	(3)	**41.**	(2)	**42.**	(2)
43.	(2)	**44.**	(1)	**45.**	(4)								