



# BIOLOGY NMDCAT

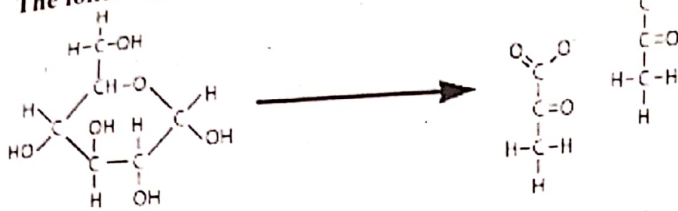
## PMC TOPIC WISE TEST (UNIT-3)

TOPIC:

✓ Topic Name: Bioenergetics

- Q.1 During flow of electrons in cyclic photophosphorylation, cytochrome complex is reduced by:  
A. Plastocyanin  
C. Plastoquinone  
[B] Ferredoxin  
D. PS-I
- Q.2 Which of the following structure is formed of hydrogen and carbon only?  
A. Phytol  
C. Plastocyanin  
B. Plastoquinone  
D. Cytochrome complex
- Q.3 Rate limiting enzyme of glycolysis is:  
A. Phosphofruktokinase  
C. Cytochrome  $a_3$   
B. Succinate dehydrogenase  
D. Pyruvate decarboxylase
- Q.4 During which product formation in Krebs cycle oxidative decarboxylation occurs:  
A. Succinate to Fumarate  
C. Alpha ketoglutarate to Succinate  
B. Fumarate to Malate  
D. Citrate to Isocitrate
- Q.5 It is not a reactant of Calvin cycle directly:  
A.  $CO_2$   
C. ATP  
B. NADPH  
D.  $O_2$
- Q.6 Chemiosmosis in animal cell occurs during:  
A. Substrate level phosphorylation  
C. Respiratory chain  
B. Krebs Cycle  
D. Photophosphorylation
- Q.7 Carotenoids can least absorb \_\_\_\_\_ color:  
A. Blue  
C. Violet  
B. Green  
D. Red
- Q.8 The proton donor in bacterial photosynthesis is:  
A. Water  
C. Ammonia  
B. Sulphur  
D. Hydrogen Sulphide
- Q.9 Site of  $CO_2$  fixation in photosynthetic bacteria:  
A. Thylakoids  
C. Stroma  
B. Grana  
D. Cytoplasm
- Q.10 During photophosphorylation, each photon excites \_\_\_\_\_ electron/s:  
A. 1  
C. 2  
B. 3  
D. 4
- Q.11 Light reaction results in the formation of:  
A.  $O_2$   
C.  $NADPH+H^+$   
B. ATP  
D. All A, B, C
- Q.12 During light phase of photosynthesis \_\_\_\_\_ is oxidized and \_\_\_\_\_ is reduced:  
A.  $CO_2$  and water  
C. Water and  $CO_2$   
B. Water and  $NADP^+$   
D.  $NADPH_2$  and  $CO_2$
- Q.13 Plant product that can be stained with Iodine is:  
A. Glucose  
C. Cellulose  
B. Starch  
D. Fructose
- Q.14 Dark reaction requires reduced compound of light reaction for:  
A. Carboxylation of RUBP  
C. Regeneration of RUBP  
B. Formation of hexose sugar  
D. Reduction of 1,3 BPG
- Q.15 Which pathway for aerobic cellular respiration takes place in the cytoplasm of eukaryotic cell?  
A. Glycolysis  
C. Krebs cycle  
B. Pyruvic acid oxidation  
D. Electron transport chain
- Q.16 Coenzyme that is used in cellular respiration:  
A.  $NADP^+$   
C.  $NAD^+$   
B. Niacin  
D. Flavin

Q.17 The following oxidation reaction is termed as:



- A. Digestion  
C. Krebs cycle
- B. Glycolysis  
D. Glyoxylate cycle
- Q.18 When yeast breaks glucose in the presence of oxygen, the products obtained are:  
A. Ethanol and water  
C. Ethanol and CO<sub>2</sub>
- B. Water and CO<sub>2</sub>  
D. Lactic acid
- Q.19 During respiratory chain of cellular respiration, cytochrome c oxidizes:  
A. Cytochrome a  
C. Cytochrome a<sub>3</sub>
- B. Cytochrome b  
D. Cytochrome a complex
- Q.20 During the complete breakdown of glucose, substrate level phosphorylation occurs during:  
A. Lactic acid fermentation  
C. Pyruvic acid oxidation
- B. Krebs cycle  
D. Electron transport chain
- Q.21 Product of phosphofructokinase is:  
A. Glucose 6-phosphate  
C. Acetyl-coA
- B. Fructose 1, 6-Bisphosphate  
D. Glyceraldehyde 3-phosphate
- Q.22 Oxidative phosphorylation takes place in:  
A. All types of cells  
C. All primitive cells
- B. All aerobic cells  
D. All anaerobic cells
- Q.23 A fatty acid having 12 carbons would produce \_\_\_\_\_ NADH:  
A. 10  
C. 18
- B. 12  
D. 6
- Q.24 Before entering Krebs cycle, the pyruvate is decarboxylated into:  
A. α-ketoglutaric acid  
C. Citric acid
- B. Glyceric acid  
D. Acetic acid
- Q.25 The term "Z scheme" is used for:  
A. Non-cyclic photophosphorylation  
C. Cyclic photophosphorylation
- B. Oxidative phosphorylation  
D. Both A and C
- Q.26 Carotenoids are present in/at \_\_\_\_\_ of chloroplast:  
A. Stroma  
C. Envelope
- B. Ribosomes  
D. Thylakoids
- Q.27 Main difference between phosphoglyceric acid and glyceraldehyde-3-phosphate:  
A. Number of carbon molecules  
C. Reduction
- B. Number of molecules  
D. Site of formation
- Q.28 Conversion of \_\_\_\_\_ to \_\_\_\_\_ facilitates FAD reduction:  
A. α-ketoglutarate, succinate  
C. Fumarate, malate
- B. Succinate, fumarate  
D. Isocitrate, α-ketoglutarate
- Q.29 Phosphofructokinase is inhibited by:  
A. High concentration of NADH  
C. High concentration of ATP
- B. Low concentration of citrate  
D. Pyruvate decarboxylase





- Q.30 Conversion of \_\_\_\_\_ to \_\_\_\_\_ requires phosphorylation:
- A. Glucose 6-phosphate to fructose 6-phosphate
  - B. Citrate to isocitrate
  - C. 1,3-Bisphosphoglycerate to 3-Phosphoglycerate
  - D. Glucose to glucose 6-phosphate
- Q.31 A GTP molecule is formed during \_\_\_\_\_ to \_\_\_\_\_ conversion:
- A. Malate, Oxaloacetate
  - B. Phosphoenol pyruvate, Pyruvate
  - C.  $\alpha$ -Ketoglutarate, Succinate
  - D. Fumarate, Malate
- Q.32 Gains of a citric acid cycle can be summarized as:
- A. 3 NADH, 1 ATP, 1 FADH<sub>2</sub>, 2 CO<sub>2</sub>
  - B. 2 NADH, 1 ATP, 1 FADH<sub>2</sub>, 2 CO<sub>2</sub>
  - C. 3 NADH, 2 ATP, 1 FADH<sub>2</sub>, 1 CO<sub>2</sub>
  - D. 3 NADH, 1 ATP, 1 FADH<sub>2</sub>, 3 CO<sub>2</sub>
- Q.33 The on acts as proton pump during photophosphorylation:
- A. Plastocyanin
  - B. Cytochrome complex
  - C. F<sub>0</sub> particle
  - D. F<sub>1</sub> particle
- Q.34 Type of phosphorylation that is absent in animals:
- A. Oxidative phosphorylation
  - B. Substrate level phosphorylation
  - C. Cyclic photophosphorylation
  - D. All are present
- Q.35 Mention a process which involves oxidation of NADH:
- A. Pyruvate oxidation
  - B. Citric acid cycle
  - C. Glycolysis
  - D. Lactic acid fermentation
- Q.36 All are differences between cyclic and non-cyclic photophosphorylation except:
- A. Release of oxygen
  - B. ATP synthesis
  - C. Types of photosystems involved
  - D. NADPH involvement
- Q.37 The process by which energy is made available to cells in a step-by-step breakdown of C-chain molecules in the cells is called:
- A. Breathing
  - B. Gaseous exchange
  - C. External respiration
  - D. Cellular respiration
- Q.38 Choose a process where NAD<sup>+</sup> is reduced:
- A. Pyruvate decarboxylation
  - B. Lactic acid fermentation
  - C. Alcoholic fermentation
  - D. Electron transport chain
- Q.39 Cellular respiration is essentially an \_\_\_\_\_ process:
- A. Reduction
  - B. Hydrogenation
  - C. Oxidation
  - D. Hydration
- Q.40 NADH and FADH<sub>2</sub> are oxidized by \_\_\_\_\_ and \_\_\_\_\_ complexes respectively:
- A. NADH dehydrogenase and FADH<sub>2</sub> decarboxylase
  - B. NADH decarboxylase and FADH<sub>2</sub> dehydrogenase
  - C. FADH<sub>2</sub> dehydrogenase and NADH dehydrogenase
  - D. NADH dehydrogenase and FADH<sub>2</sub> dehydrogenase



Q.41 What correctly represents different stages of aerobic respiration?

	ATP by Substrate level phosphorylation	NADH	FADH <sub>2</sub>	CO <sub>2</sub>
A.	6	10	2	6
B.	4	8	1	8
C.	2	12	2	4
D.	6	10	4	6

Q.42 Bacteriochlorophylls can be present in all except:

- A. Green algae  
B. Blue green algae  
C. Purple sulphur bacteria  
D. Purple non-sulphur bacteria

Q.43 An electron carrier without containing any metal:

- A. Plastocyanin  
B. Cytochrome complex  
C. Ferredoxin  
D. Plastoquinone

Q.44 The membranes which are used during chemiosmosis in eukaryotic cell include:

- A. Cristae, Thylakoid membranes  
B. Cristae, Cell membrane  
C. Cisternae, Cell membrane  
D. Inner and outer nuclear membranes

Q.45 Pick a process where carbon fixation takes place:

- A. Pyruvate oxidation  
B. Glycolysis  
C. Respiratory chain  
D. Calvin Cycle

Q.46 An enzyme not involved in addition of phosphate in its substrate:

- A. Glucokinase  
B. Hexokinase  
C. Phosphatase  
D. Phosphofructokinase

Q.47 Name the structure that allows the movement of protons and produces energy currency of cell:

- A. ATP synthase  
B. Cytochrome reductase  
C. NADH dehydrogenase  
D. Cytochrome oxidase

Q.48 This reaction is not catalyzed by Isomerase:

- A. Glucose-6-phosphate to fructose-6-phosphate  
B. DHAP to G<sub>3</sub>P  
C. 1, 3 bisphosphoglycerate to 3 phosphoglycerate  
D. 3 phosphoglycerate to 2phosphoglycerate

Q.49 ATP required for synthesis of maltose through photosynthesis:

- A. 18  
B. 36  
C. 9  
D. 180

Q.50 Primary fuel for cellular activities:

- A. Pyruvate  
B. Glycogen  
C. Glucose  
D. Acetyl CoA

# Bienergetik

1-B	11-D	21-B	31-C	41-A
2-A	12-B	22-B	32-A	42-A
3-A	13-B	23-C	33-B	43-D
4-C	14-D	24-D	34-C	44-A
5-D	15-A	25-A	35-D	45-D
6-C	16-C	26-D	36-B	46-C
7-D	17-B	27-C	37-D	47-A
8-D	18-B	28-B	38-A	48-C
9-D	19-B	29-C	39-E	49-B
10-A	20-B	30-D	40-D	50-C