NEET UG (2024) BROID (2024) Quiz-7

SECTION - A

- 101. Which process of Calvin cycle requires RuBP?
 - (1) Carboxylation (2) Reduction
 - (3) Regeneration (4) None of these
- **102.** In C₄ plants, CO_2 combines with PEP in the presence of;
 - (1) PEP carboxylase (2) RuBP carboxylase
 - (3) RuBP oxygenase (4) Hydrogenase
- **103.** Splitting of water is related with;
 - (1) photosystem I.
 - (2) photosystem II.
 - (3) both (1) and (2).
 - (4) Cyclic photophosphorylation.
- **104.** Reduction process of Calvin cycle requires how many ATP and NADPH for the reduction of one molecule of CO₂?
 - (1) 2 mole ATP and 3 mole NADPH
 - (2) 2 mole ATP and 2 mole NADPH
 - (3) 1 mole ATP and 2 mole NADPH
 - (4) 3 mole ATP and 2 mole NADPH
- **105.** In photorespiration 2C compound is produced which is;
 - (1) PGA.
 - (2) PGAL.
 - (3) phosphoglycolate.
 - (4) glycolate.
- 106. Which acts as a transmembrane channel?
 - (1) F_0 of ATPase (2) F_1 of ATPase
 - (3) Both (1) and (2) (4) None of these
- **107.** The first stable product of Calvin cycle has;
 - (1) 2 carbon atoms
 - (2) 3 carbon atoms
 - (3) 4 carbon atoms
 - (4) 6 carbon atoms

108. How many ATP require to fix one glucose in Calvin cycle?

- (1) 18
- (2) 12
- (3) 6
- (4) 24

109. The place where cyclic flow of electrons occur;

- (1) thylakoid of grana.
- (2) stroma.
- (3) stroma lamellae.
- (4) All of the above.
- **110.** Cyclic-photophosphorylation results in the formation of;
 - (1) NADPH only
 - (2) ATP and NADPH only
 - (3) ATP, NADPH and oxygen only
 - (4) ATP only
- **111.** Find out the **incorrect** events of non-cyclic photophosphorylation.
 - (1) Only one photosystem participates in it
 - (2) ATP and NADPH₂ are not produced
 - (3) Photolysis of water takes place
 - (4) Both (1) and (2)
- **112.** How many ATP molecules are produced from the complete oxidation of a molecule of acetyl Co-A?
 - (1) 38 ATP (2) 15 ATP
 - (3) 12 ATP (4) 4 ATP
- **113.** During aerobic respiration, acetyl CoA is Synthesised in;
 - (1) cytosol.
 - (2) mitochondrial matrix.
 - (3) glyoxysomal matrix.
 - (4) perichondrial space.

- **114.** Which of the following occurs during regeneration of oxaloacetic acid by malic dehydrogenase in TCA cycle?
 - (1) Reduction of FAD to FADH₂
 - (2) Conversion of GDP to GTP
 - (3) Reduction of NAD⁺ to NADH + H^+
 - (4) Removal of CO^2
- **115.** Water stress leads to
 - (1) Closing of stomata
 - (2) Wilting of leaves
 - (3) Reduced activity of leaf
 - (4) All of above
- **116.** Choose the **correct** match.
 - (1) Priestley Role of CO_2
 - (2) Mohl Role of air
 - (3) Ingenhousz Role of sunlight
 - (4) Engelmann Purple bacteria
- 117. During photorespiration;
 - (1) RuBisCO binds with O₂.
 - (2) Phosphoglycerate and phosphoglycolate are formed.
 - (3) Sugar is not synthesised.
 - (4) All of the above.
- 118. Choose the incorrect match.
 - (1) C_3 plant Photorespiration
 - (2) C_3 plant Kranz anatomy
 - (3) C_4 plant Higher temperature
 - (4) Blackman Law of limiting factor
- 119. When electron move through ETS in between PS-II and PS-I then proton move from;
 - (1) Granal thylakoid to stromal thylakoid
 - (2) Stroma to lumen of granal thylakoid
 - (3) Stroma to lumen of stromal lamellae
 - (4) Lumen of thylakoid to stroma
- 120. Within chloroplast, the membranous system is made up of;
 - (1) grana (2) stroma lamellae
 - (4) Both (1) and (2) (3) stroma
- **121.** Respiratory quotient (RQ) value of tripalmitin is;
 - (1) 0.7 (2) 0.9
 - (3) more than one (4) 1

- 122. Which of the following is not occurs during conversion of a-ketoglutarate to succinate in Krebs' cycle?
 - (1) Removal of CO₂
 - (2) Reduction of NAD⁺ to NADH + H^+
 - (3) Reduction of FAD to FADH₂
 - (4) Both (1) and (2)
- **123.** Number of net ATP form by sucrose in anaerobic glycolysis
 - (1) 2 (2) 72
 - (3) 4 (4) 5
- 124. Bundle sheath cells of maize plant leaf;
 - (1) have RuBisCO enzyme.
 - (2) have large number of chloroplasts.
 - (3) have intercellular spaces.
 - (4) both (1) and (2)
- 125. Assertion: Each molecule of RuBP fixes one molecule of CO₂

Reason: Three molecules of NADPH and 2ATP required for fixation of one molecule of CO₂ in Calvin cycle.

- (1) Both Assertion & Reason are true and the reason is the correct explanation of the assertion.
- (2) Both Assertion & Reason are true but the reason is not the correct explanation of the assertion.
- (3) Assertion is true statement but Reason is false.
- (4) Both Assertion and Reason are false statements
- 126. Which of the following complex has Cu centre in respiratory ETS?
 - (1) Complex I (2) Complex II
 - (4) Complex IV (3) Complex III
- 127. Aerobic fate of pyruvate is occurred in;
 - (1) cytoplasm.
 - (2) mitochondria.
 - (3) peroxisome.
 - (4) chloroplast.
- **128.** In which of aerobic respiration oxygen is used?
 - (1) Glycolysis (2) Link reaction
 - (3) Krebs' cycle
 - (4) ETC

- **129.** Connecting link between glycolysis and Krebs' cycle is;
 - (1) PGA.
 - (2) aldehyde.
 - (3) ketone.
 - (4) acetyl CoA.
- **130.** Which of the following enzyme located in cytoplasm?
 - (1) Hexokinase
 - (2) Citrate synthetase
 - (3) Pyruvate dehydrogenase
 - (4) Succinate dehydrogenase
- 131. The most crucial step of Calvin cycle is;
 - (1) decarboxylation
 - (2) regeneration
 - (3) carboxylation
 - (4) reduction
- **132.** The final electron acceptor in non-cyclic photophosphorylation is:
 - (1) H₂O
 - (2) ADP
 - (3) NADP⁺
 - (4) NAD⁺
- **133.** Which of the following is a mobile electron carrier during the ETS in mitochondria?
 - (1) Cytochrome a and a_3
 - (2) Cytochrome c
 - (3) Cytochrome c oxidase
 - (4) Cytochrome c reductase
- **134.** When pyruvic acid is converted into ethanol and CO_{2;}
 - (1) NAD⁺ is reduced to NADH + H⁺
 - (2) NAD+ is oxidised to NADH + H^+
 - (3) NADH + H^+ is reduced to NAD⁺
 - (4) NADH + H^+ is oxidised to NAD⁺
- **135.** Which of the following is found in reaction centre?
 - (1) Chlorophyll-a
 - (2) Chlorophyll-b
 - (3) Carotenoids
 - (4) Xanthophyll

SECTION – B

- **136.** Oxidative decarboxylation of pyruvic acid occurs in;
 - (1) inner membrane of chloroplast
 - (2) stroma of chloroplast
 - (3) mitochondrial matrix
 - (4) perimitochondrial space
- **137.** The final electron acceptor during the light reaction of photosynthesis is;
 - (1) chlorophyll-a.
 - (2) ferredoxin.
 - (3) plastoquinone.
 - (4) cytochromes.
- **138.** Fatty acids are degraded into _____ and then enter the respiratory pathway.
 - (1) Acetyl CoA
 - (2) PGAL
 - (3) Pyruvic acid
 - (4) DHAP
- 139. The number of carboxylation in C_4 cycle is/are

(1) 1	(2)	2
(3) 5	(4)	3

140. Assertion: Oxidative phosphorylation occurs in light reaction of photosynthesis.

Reason: Stroma contains all the enzymes required in oxidative phosphorylation.

- (1) Both Assertion & Reason are true and the reason is the correct explanation of the assertion.
- (2) Both Assertion & Reason are true but the reason is not the correct explanation of the assertion.
- (3) Assertion is true statement but Reason is false.
- (4) Both Assertion and Reason are false statements.
- **141.** Pyruvate, formed by glycolytic catabolism in cytosol, enters mitochondrial matrix and undergoes;
 - (1) oxidative deamination
 - (2) oxidative phosphorylation
 - (3) oxidative decarboxylation
 - (4) oxidative carboxylation

- **142.** Condensation of acetyl-CoA with OAA and water is catalysed by;
 - (1) Isocitrate dehydrogenase
 - (2) Citrate synthase
 - (3) Aconitase
 - (4) Succinate dehydrogenase
- **143.** EMP pathway is the another name of:
 - (1) ETS
 - (2) Oxidative phosphorylation
 - (3) Glycolysis
 - (4) Krebs' cycle
- 144. In Hatch and Slack pathway, C₄ acid is formed in:
 - (1) mesophyll cells. (2) bundle sheath cells.
 - (3) epidermal cells. (4) subsidiary cells.
- **145.** In which type of cells, C_4 acids in maize are broken down to release CO_2 and 3-carbon molecule?
 - (1) In bundle sheath cells of C_3 plant
 - (2) In mesophyll cells of C₄ plants
 - (3) In bundle sheath cells of C_4 plants
 - (4) In mesophyll cells of C_3 plant
- 146. Light and dark reactions of photosynthesis occur in ______&___, respectively.
 - (1) Stroma, grana
 - (2) Thylakoids, stroma
 - (3) Thylakoids, grana
 - (4) Grana, thylakoid

SECTION - A

- **151.** Pseudo coelom is found in phylum
 - (1) Arthropoda (2) Aschelminthes
 - (3) Platyhelminthes (4) Annelida
- 152. Which hormone is associated with pars nervosa
 - (1) GH (2) FSH
 - (3) Oxytocin (4) GnRH
- **153.** Which endocrine gland is associated with diencephalon part of brain?
 - (1) Pituitary gland
 - (2) Hypothalamus
 - (3) Thymus gland
 - (4) Thyroid gland

- **147.** Which of the following is same in a C_3 and C_4 plants?
 - (1) Presence of RuBisCO in mesophyll cells
 - (2) Primary fixation of CO₂ by RuBisCO enzyme
 - (3) Number of carbon atoms in primary CO₂ acceptor
 - (4) Number of NADPH used to fix one CO₂ molecule
- **148.** Which of the following is wrong?
 - (1) Complex I known as NADH dehydrogenase
 - (2) Complex III also have ubiquinone as a part
 - (3) Complex IV finally transport electron to oxygen
 - (4) Complex II have copper in it
- **149.** Choose the wrong statement w.r.t aerobic respiration.
 - (1) Complete oxidation of glucose takes place
 - (2) End products are CO₂ and H₂O
 - (3) NADH is vigrously oxidised to NAD+
 - (4) Fatty acid is the most favoured substrate
- **150.** For chemiosmosis, the proton accumulation in mitochondria takes place in;
 - (1) matrix.
 - (2) outer membrane.
 - (3) inner membrane.
 - (4) intermembrane space.
- (ZOOLOGY)
 - **154.** Which phylum have tissue level of organisation and radial symmetry?
 - (1) Annelida (2) Echinodermata
 - (3) Arthropoda (4) Ctenophora
 - **155.** Which phylum's members are acoelomate and triploblastic?
 - (1) Aschelminthes (2) Annelida
 - (3) Coelenterata (4) Platyhelminthes
 - **156.** Metameric segmentation can be seen in
 - (1) Phylum Arthropoda and Phylum Chordata
 - (2) Phylum Chordata and Phylum Hemichordata
 - (3) Phylum Annelida and Phylum Mollusca
 - (4) Phylum Annelida and Phylum Platyhelminthes

157. Statement based question:

Statement-1: Hormones are nutrients that are produced in trace amounts.

Statement-2: Hormones are produced by ductless glands.

- (1) Both statement-1 & statement-2 are correct.
- (2) Statement-1 is correct, but statement-2 is incorrect.
- (3) Statement-1 is incorrect, but statement-2 is correct.
- (4) Both statements are incorrect.
- **158.** Severe disfigurement of face and premature death are seen in
 - (1) Gigantism
 - (2) Cretenism
 - (3) Acromegaly
 - (4) Dwarfism
- **159.** Which hormone help in reabsorption of Na⁺ from filtrate into blood in nephrons of kidney?
 - (1) ANF (2) Aldosterone
 - (3) ACTH (4) DHEA
- 160. Notochord is
 - (1) Ectodermal and Dorsal
 - (2) Mesodermal and Ventral
 - (3) Endodermal and Dorsal
 - (4) Mesodermal and Dorsal
- **161.** Increase in which hormone may lead to rupture of graafian follicle and release of female gamete from ovary, also known as ovulation.
 - (1) TSH
 (2) FSH
 (3) LH
 (4) ACTH
- 162. Which hormone is not produced by pars distalis?
 - (1) Androgen
 - (2) Prolactin
 - (3) Somatotrophin
 - (4) TSH
- **163.** Which phylum has bilateral symmetry, open circulatory system and shows metameric segmentation?
 - (1) Mollusca
 - (2) Arthropoda
 - (3) Annelida
 - (4) Chordata

- **164.** For secretion of androgens which option can be related in the following
 - (1) Secreted by corpus luteum
 - (2) Secreted by leydig cells
 - (3) Secreted by seminiferous tubules sertoli cell
 - (4) Secreted by graafian follicle
- **165.** Which hormone is related to calcium homeostasis and increase blood calcium level?
 - (1) Parathyroid hormone
 - (2) Thyrocalcitonin
 - (3) Thymosin
 - (4) Insulin
- **166.** Which gland is located on the dorsal side of forebrain?
 - (1) Thymus gland (2) Pituitary gland
 - (3) Pineal gland (4) Thyroid gland
- **167.** Which hormone helps in water conservation in body and prevents loss of H₂O in Urine?
 - (1) Vasopressin (2) Oxytocin
 - (3) MSH (4) ANF
- **168.** Which phylum is associated with 'Mesoglea' layer?
 - (1) Coelenterata
 - (2) Platyhelminthes
 - (3) Aschelminthes
 - (4) Annelida

169. Statement-1: Platyhelminthes have organ level of organisation.

Statement-2: Platyhelminthes have complete digestive system.

(1) Both statement-1 & statement-2 are correct.

(2) Statement-1 is correct, but statement-2 is incorrect.

(3) Statement-1 is incorrect, but statement-2 is correct.

(4) Both statements are incorrect.

- **170.** Which hormone plays a important role in basal metabolic rate, RBCs formation, maintenance of water and electrolyte balance?
 - (1) Tetraiodotyrosine
 - (2) Triiodothyronine
 - (3) Aldosterone
 - (4) Triiodotyrosine

- **171.** Which hormone maintains a 24-hour (diurnal) rhythm of our body and also maintains body temperature?
 - (1) Melatonin
 - (2) Melanin
 - (3) Melanocyte stimulating hormone
 - (4) Thyroxine
- **172.** Which hormone's deficiency may cause diabetes insipidus?
 - (1) Insulin
 - (2) Glucagon
 - (3) Vasopressin
 - (4) Growth hormone
- **173.** Stunted growth, mental retardation, low IQ, deafness and mutism infants and children are symptoms of
 - (1) Cretenism (2) Grave's disease
 - (3) Dwarfism (4) Gigantism
- **174.** Which hormone activity may be due to modulation of gene expression leading to more or less production of mRNA and proteins?
 - (1) FSH (2) Adrenaline
 - (3) Estrogen (4) Insulin
- **175.** Which part of body makes erythropoietin hormone?
 - (1) Kidney
 - (2) Brain
 - (3) Thyroid gland
 - (4) Parathyroid gland
- **176.** Which hormone causes release of water and bicarbonates from pancreas?
 - (1) Cholecystokinin (2) Secretin
 - (3) Gastrin (4) Insulin
- **177. Statement-1:** Phylum Mollusca have open circulatory system.

Statement-2: Atrial Natriuretic factor increases blood pressure.

- (1) Both statement-1 & statement-2 are correct.
- (2) Statement-1 is correct, but statement-2 is incorrect.
- (3) Statement-1 is incorrect, but statement-2 is correct.
- (4) Both statements are incorrect.

- 178. Assertion and Reason type question.Assertion (A): For development of mammary glands, progesterone hormone is essential.Reason (R): Progesterone helps in formation of ducts inside mammary gland.
 - (1) Both A & R are correct & R is correct explanation of A.
 - (2) Both A & R are correct & R is not correct explanation of A.
 - (3) A is correct but R is incorrect.
 - (4) Both A & R are incorrect.
- **179.** Which of the following is a second messenger?
 - (1) Na⁺ (2) K⁺ (3) Ca²⁺ (4) HCO_3^{-1}
- **180.** Which hormone acts on CNS and influence libido (male sexual behaviour)?
 - (1) Androgens
 - (2) Aldosterone
 - (3) Testosterone
 - (4) Both (1) and (3)
- 181. Which hormone increase blood sugar levels?
 - (1) Insulin (2) Cortisol
 - (3) Gastrin (4) Prolactin
- 182. Zona fasciculata secretes hormone
 - (1) Aldosterone
 - (2) Glucocorticoids
 - (3) Sex corticoids
 - (4) Mineralocorticoids
- **183.** Animals having cellular level of organisation and mostly asymmetrical are found in phylum
 - (1) Phylum Porifera e.g. Hydra
 - (2) Phylum Coelenterate e.g. sponge
 - (3) Phylum Porifera e.g. sponge
 - (4) Phylum Ctenophora e.g. Hydra
- **184.** Which hormone is secreted by gastrointestinal tract?
 - (1) GH (2) Prolactin
 - (3) Cholecystokinin (4) ANF
- **185.** Which of the following is a gonadotrophin?
 - (1) GnRH
 - (2) FSH
 - (3) GHRH
 - (4) Testosterone

SECTION – B

- **186.** Which disease is due to hypersecretion of a hormone?
 - (1) Addison's disease
 - (2) Diabetes mellitus
 - (3) Myxoedema
 - (4) Grave's disease
- **187. Statement-1:** True coelom was first seen in phylum Annelida.

Statement-2: Annelids have open circulatory system.

- (1) Both statement-1 & statement-2 are correct.
- (2) Statement-1 is correct, but statement-2 is incorrect.
- (3) Statement-1 is incorrect, but statement-2 is correct.
- (4) Both statements are incorrect.
- **188.** Match the column (Column A and Column B) and choose the correct option.

Column-A		Column-B	
(a)	Thymosi	(i) Thyroid glands	
	n		
(b)	FSH	(ii)	Hypothalamus
(c)	TSH	(iii)	T cell differentiation
(d)	ACTH	(iv)	Follicular
			development in ovary
		(v)	Cortisol

- (1) a-(iii), b-(ii), c-(i), d-(v)
- (2) a-(i), b-(iv), c-(ii), d-(v)
- (3) a-(iii), b-(iv), c-(i), d-(v)
- (4) a-(ii), b-(iii), c-(i), d-(iv)
- **189.** Which hormone stimulates the mammary glands and helps in milk formation?
 - (1) Oxytocin (2) Estrogen
 - (3) Prolactin (4) Progesterone
- **190.** Assertion and Reason type question.

Assertion (A): Deficiency of oxytocin may lead to inability to deliver a baby/child.

Reason (**R**): Oxytocin acts on fallopian tube and vagina and help in child birth.

- (1) Both A & R are correct & R is correct explanation of A.
- (2) Both A & R are correct & R is not correct explanation of A.
- (3) A is correct but R is incorrect.
- (4) Both A & R are incorrect.

- **191.** Triploblastic, coelomate with radial symmetry is seen in
 - (1) Ctenophora
 - (2) Echinoderms
 - (3) Arthropoda
 - (4) Cnidaria
- **192.** Which phylum has a type of circulatory system in which cells and tissues are directly bathed in blood?
 - (1) Chordata
 - (2) Platyhelminthes
 - (3) Arthropoda
 - (4) Annelida
- **193.** Deficiency or under production of hormones by adrenal cortex may lead to
 - (1) Cretenism
 - (2) Addison's disease
 - (3) Myxoedema
 - (4) Gigantism
- **194.** Assertion and Reason type question. Assertion (A): Addison's disease may lead to

low blood glucose levels.

Reason (R): Cortisol induces gluconeogenesis.

- (1) Both A & R are correct & R is correct explanation of A.
- (2) Both A & R are correct & R is not correct explanation of A.
- (3) A is correct but R is incorrect.
- (4) Both A & R are incorrect.
- **195.** Which is a function of catecholamine?
 - (1) Water retention in body
 - (2) Spermatogenesis
 - (3) Female sexual behaviour
 - (4) Pupillary dilation
- **196.** Which hormone work with a second messenger?
 - (1) Thyroxine (2) Aldosterone
 - (3) Testosterone (4) FSH
- **197.** Which hormone acts on hepatocytes and adipocytes and promotes glucose uptake by cells as well as glycogen formation?
 - (1) Glucagon
 - (2) Insulin
 - (3) Cortisol
 - (4) GIP

198. Find the incorrect match

- (1) Ascaris : Triploblastic
- (2) *Taenia* : Pseudocoelomate
- (3) *Periplaneta* : Open circulatory system
- (4) *Hydra* : Diploblastic
- **199.** Which hormone is administered in cases of organ transplantation?
 - (1) Cortisol
 - (2) Adrenaline
 - (3) GH
 - (4) Aldosterone

200. Assertion and Reason:

Assertion (A): Hypersecretion of GnRH may lead to increased activity in gonads.

Reason (**R**): GnRH from pituitary gland stimulates the release of FSH and LH from gonads.

- (1) Both A & R are correct & R is correct explanation of A.
- (2) Both A & R are correct & R is not correct explanation of A.
- (3) A is correct but R is incorrect.
- (4) Both A & R are incorrect.

(BOTANY)

101. (1)

During Calvin cycle CO₂ is utilized for the carboxylation of RuBP is presence of RuBisCo enzyme to form two molecules of 3-PGA.

CLASS 11 NCERT PG NO. 216

102. (1)

The primary CO₂ acceptor is a 3-carbon molecule phosphoenol pyruvate (PEP) and is present in the mesophyll cells. The enzyme responsible for this fixation is PEP carboxylase or PEP case.

CLASS 11 NCERT PG NO. 219

103. (2)

The splitting of water is associated with the PS II. CLASS 11 NCERT PG NO. 212

104. (2)

Reduction process of Calvin cycle requires 2 ATP molecules for phosphorylation and 2 NADPH molecules for the reduction of one molecule of CO₂ CLASS 11 NCERT PG NO. 216

105. (3)

In C₃ plants some O₂ does bind to RuBisCO, and hence CO2 fixation is decreased. Here the RuBP instead of being converted to 2 molecules of PGA binds with O2 to form one molecule of phosphoglycerate and phosphoglycolate (2 Carbon) in a pathway called photorespiration.

CLASS 11 NCERT PG NO. 220

106. (1)

F₀ of ATPase acts as a transmembrane channel CLASS 11 NCERT PG NO. 215

107. (2)

Carboxylation is the most crucial step of the Calvin cycle where CO_2 is utilised for the carboxylation of RuBP. This reaction is catalysed by the enzyme RuBP carboxylase which results in the formation of two molecules of 3-PGA

CLASS 11 NCERT PG NO. 216

108. (1)

18 ATP require to fix one glucose in Calvin cycle. CLASS 11 NCERT PG NO. 216

109. (3)

Cyclic flow of electrons occurs in stroma lamellae. CLASS 11 NCERT PG NO. 213

110. (4)

While the membrane or lamellae of the grana have both PS I and PS II the stroma lamellae membranes lack PS II as well as NADP reductase enzyme. The excited electron does not pass on to NADP+ but is cycled back to the PS I complex through the electron transport chain. The cyclic flow hence, results only in the synthesis of ATP, but not of NADPH $+ H^+$.

CLASS 11 NCERT PG NO. 213

111. (4)

When the two photosystems work in a series, first PS II and then the PS I, a process called non-cyclic photo-phosphorylation occurs. The two photosystems are connected through an electron transport chain, as seen earlier - in the Z scheme. Both ATP and NADPH $+ H^+$ are synthesised.

CLASS 11 NCERT PG NO. 212, 213

112. (3)

12 ATP molecules are produced from the complete oxidation of a molecule of acetyl Co-A.

CLASS 11 NCERT PG NO. 232

113. (2)

During aerobic respiration, acetyl CoA is synthesised in mitochondrial matrix.

CLASS 11 NCERT PG NO. 232

114. (3)

Malic acid converted into oxaloacetic acid by malic dehydrogenase in TCA cycle during this process reduction of NAD⁺ to NADH + H^+ occur.

CLASS 11 NCERT PG NO. 232

115. (4)

Water stress causes the stomata to close hence reducing the CO₂ availability. Besides, water stress also makes leaves wilt, thus, reducing the surface area of the leaves and their metabolic activity as well.

CLASS 11 NCERT PG NO.223

116. (3)

Ingenuous in an elegant experiment with an aquatic plant showed that in bright sunlight, small bubbles were formed around the green parts while in the dark they did not. Later he identified these bubbles to be of oxygen. Hence, he showed that it is only the green part of the plants that could release oxygen.

CLASS 11 NCERT PG NO. 207

117. (4)

In C_3 plants some O_2 does bind to RuBisCO, and hence CO_2 fixation is decreased. Here the RuBP instead of being converted to 2 molecules of PGA binds with O_2 to form one molecule of phosphoglycerate and phosphoglycolate (2 Carbon) in a pathway called photorespiration. In the photorespiratory pathway, there is neither synthesis of sugars, nor of ATP.

CLASS 11 NCERT PG NO. 220

118. (2)

Vascular bundles of the C₄ plants are called bundle sheath cells, and the leaves which have such anatomy are said to have "Kranz" anatomy.

CLASS 11 NCERT PG NO. 218

119. (2)

Proton move from stroma to lumen of grana thylakoid.

CLASS 11 NCERT PG NO. 214

120. (4)

Membranous system of chloroplast consisting of grana and stroma lamellae

CLASS 11 NCERT PG NO. 209

121. (1)

Respiratory quotient (RQ) value of tripalmitin is 0.7

- * RQ value of protein 0.9
- * RQ value of carbohydrates 1
- RQ value of organic acid more than 1
 CLASS 11 NCERT PG NO. 237

122. (3)

Reduction of FAD to $FADH_2$ occur during conversion of succinate to fumarate.

CLASS 11 NCERT PG NO. 232

123. (3)

- * Sucrose is disaccharide composed of glucose and fructose.
- ^k Sucrose is converted into glucose and fructose by the enzyme, invertase, and these two monosaccharides readily enter the glycolytic pathway.
- * In glycolysis from one molecule of glucose net gain of 2 ATP.
- * So, net 4 ATP form by sucrose in anaerobic glycolysis.

CLASS 11 NCERT PG NO. 229 - 229

124. (4)

The bundle sheath cells may form several layers around the vascular bundles; they are characterised by having a large number of chloroplasts, thick walls impervious to gaseous exchange and no intercellular spaces.

CLASS 11 NCERT PG NO. 218

125. (3)

Three molecules of ATP and 2 NADPH required for fixation of one molecule of CO₂.

* 2ATP and 2 NADPH required in reduction step.

* 1ATP required for regeneration of RuBP in regeneration steps.

CLASS 11 NCERT PG NO. 217, 218

126. (4)

Complex IV refers to cytochrome c oxidase complex containing cytochromes a and a₃, and two copper centres.

CLASS 11 NCERT PG NO. 233

127. (2)

- * Aerobic fate of pyruvate is occurred in mitochondria.
- For the complete oxidation of glucose to CO₂ and H₂O, however, organisms adopt Krebs' cycle which is also called as aerobic respiration. This requires O₂ supply.
- Krebs' cycle occurs in mitochondrial matrix.
 CLASS 11 NCERT PG NO. 232

128. (4)

In ETC oxygen is used as final electron acceptor. CLASS 11 NCERT PG NO. 233

129. (4)

Connecting link between glycolysis and Krebs' cycle is acetyl CoA.

CLASS 11 NCERT PG NO. 218

130. (1)

- * Hexokinase enzyme located in cytoplasm
- * Citrate synthetase, Pyruvate dehydrogenase, Succinate dehydrogenase are located in matrix of mitochondria.

CLASS 11 NCERT PG NO. 229

131. (3)

The most crucial step of Calvin cycle is carboxylation.

CLASS 11 NCERT PG NO. 216

132. (3)

The final electron acceptor in non-cyclic photophosphorylation is NADP⁺.

CLASS 11 NCERT PG NO. 212

133. (2)

Cytochrome c is a small protein attached to the outer surface of the inner membrane and acts as a mobile carrier for transfer of electrons between complex III and IV.

CLASS 11 NCERT PG NO. 233

134. (4)

In fermentation, say by yeast, the incomplete oxidation of glucose is achieved under anaerobic conditions by sets of reactions where pyruvic acid is converted to CO_2 and ethanol. The enzymes, pyruvic acid decarboxylase and alcohol dehydrogenase catalyse these reactions.

The reducing agent is NADH + H^+ which is reoxidised to NAD^{+.}

CLASS 11 NCERT PG NO. 230

135. (1)

- ⁴ The single chlorophyll a molecule forms the reaction centre.
- Each photosystem has all the pigments (except one molecule of chlorophyll a) forming a light harvesting system also called antennae . These pigments help to make photosynthesis more efficient by absorbing different wavelengths of light. Chlorophyll-b, Carotenoids, Xanthophyll are accessory pigments

CLASS 11 NCERT PG NO. 211

136. (3)

Oxidative decarboxylation of pyruvic acid occurs in mitochondrial matrix.

CLASS 11 NCERT PG NO. 232

137. (2)

The final electron acceptor during the light reaction of photosynthesis is Ferredoxin, and finally downhill to NADP⁺ resulting in the formation of NADPH + H^+ in the Z scheme.

CLASS 11 NCERT PG NO. 212

138. (1)

Fatty acids would be broken down to acetyl CoA before entering the respiratory pathway when it is used as a substrate.

CLASS 11 NCERT PG NO. 235

139. (2)

The number of carboxylation in C₄ cycle are Two.



CLASS 11 NCERT PG NO. 219

140. (4)

- In respiration it is the energy of oxidationreduction utilised for the proton gradient required for phosphorylation. It is for this reason that the process is called oxidative phosphorylation.
- * Oxidative phosphorylation occurs in inner mitochondrial membrane.

CLASS 11 NCERT PG NO. 209, 216

141. (3)

Pyruvate, which is formed by the glycolytic catabolism of carbohydrates in the cytosol, after it enters mitochondrial matrix undergoes oxidative decarboxylation by a complex set of reactions catalysed by pyruvic dehydrogenase.

CLASS 11 NCERT PG NO. 232

142. (2)

Condensation of acetyl-CoA with OAA and water is catalysed by citrate synthase.

CLASS 11 NCERT PG NO. 232

143. (3)

EMP pathway is the another name of glycolysis. CLASS 11 NCERT PG NO. 228

144. (1)

The C_4 acid OAA is formed in the mesophyll cells. It then forms other 4-carbon compounds like malic acid or aspartic acid in the mesophyll cells itself.

CLASS 11 NCERT PG NO. 219

145. (3)

In bundle sheath cells of C_4 plants e.g. Maize C_4 acid (Malic acid) broken down to release CO_2 and 3 carbon molecules i.e., pyruvate.

CLASS 11 NCERT PG NO. 218

146.	(2) Light and dark reactions of photosynthesis occur in	148. (4)			
	thylakoid & stroma, respectively.		Complex IV have copper in it.		
147.	(4)		CLASS II NCERT FG NO. 255		
	 In C₃ plants, Presence of RuBisCO in mesophyll cells. Fixation of CO₂ by RuBisCO enzyme RuBP(5C) is primary CO₂ acceptor In C₄ plants Presence of RuBisCO in bundle sheath cells. Presence of PEP carboxylase in mesophyll 	149. 150.	 (4) Glucose is the favoured substrate for respiration. CLASS 11 NCERT PG NO. 229 (4) 		
	 cells. Primary fixation of CO₂ by PEP carboxylase enzyme. PEP(3C) is primary CO₂ acceptor. CLASS 11 NCERT PG NO. 218, 219 		For chemiosmosis, the proton accumulation in mitochondria takes place in intermembrane space. CLASS 11 NCERT PG NO. 233		
	(Z001	LOGY)		
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160.	NCERT 11 th Page No 245	171.	. (1) NCERT 11 th Page No 242		
161.	NCERT 11 th Page No 39 (3)	172.	. (3) NCERT 11 th Page No 241		
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183.	(3)	NCERT 11 th Page No 245	170. (4)	NCERT 11 th Page No 248
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