# NEET UG (2024)
# Biology
# Quiz-10
# (BOTANY)

## SECTION – A

**101.** During respiration, three carbon (3C) acid is formed in;

(1) mitochondrial matrix.

(2) cytoplasm.

(3) inter membrane space of mitochondria.

(4) inner membrane of mitochondria.

**102.** The total number of ATP produced from ETS only from one molecule of pyruvic acid in aerobic respiration is;

(1) 9

(2) 14

(3) 11

(4) 17

**103.** Connecting link between glycolysis and Krebs' cycle is;

(1) PGA.

(2) aldehyde.

(3) ketone.

(4) acetyl CoA.

**104.** When Krebs' cycle starts with one molecule of acetyl CoA, then it produces:

(1) 1 NADH + $H^+$ and 3 $FADH_2$ + 1 GTP

(2) 2 NADH + $H^+$ and 2 $FADH_2$ + 2 GTP

(3) 3 NADH + $H^+$ and 1 $FADH_2$ + 1 GTP

(4) 3 NADH + $H^+$ + 2 $FADH_2$ + 1 GTP

**105.** During glycolysis all of the following seen, **except**:
(1) $NAD^+$ is converted to $NADH + H^+$.
(2) Energy is released.
(3) There is conversion of fructose-1, 6-bisphosphate to glucose-6-phosphate.
(4) Two molecules of pyruvic acid are formed.

**106.** Barrel shape cells are …… in dicot root:
(1) pith (2) endodermis
(3) pericycle (4) cortex

**107.** Trichome are hair like structure have all features, **except**;
(1) Can be secretory
(2) Only stiff
(3) Branched or unbranched
(4) Helps preventing water loss due to transpiration

**108.** Fatty acids are degraded into_____ and then enter the respiratory pathway:
(1) acetyl CoA (2) PGAL
(3) pyruvic acid (4) DHAP

**109.** In electron transport system (ETS) in mitochondria, enzyme NADH dehydrogenase is associated with;
(1) complex IV. (2) complex III.
(3) complex II. (4) complex I.

**110.** Number of net ATP form by one glucose molecule in anaerobic glycolysis;
(1) 2 (2) 4
(3) 10 (4) 6

**111.** In dicot root, the vascular cambium is:
(1) Completely primary in origin
(2) Partly primary and partly secondary
(3) Completely secondary in origin
(4) All of above

**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.** Which of the following is **correct** about dorsiventral leaf?
(1) The veins vary in thickness in the reticulate venation.
(2) Palisade parenchyma is abaxially placed.
(3) Abaxial surface bears no stomata.
(4) The size of vascular bundles are independent on the size of veins

**114.** Which of the following occurs during regeneration of oxaloacetic acid by malic dehydrogenase in TCA cycle?
(1) Reduction of FAD to $FADH_2$
(2) Conversion of GDP to GTP
(3) Reduction of $NAD^+$ to $NADH + H^+$
(4) Removal of $CO_2$

**115.** Stomatal apparatus consists of:
(1) subsidiary cells.
(2) guard cells.
(3) stomatal aperture.
(4) all of the above.

**116.** Glucose is phosphorylated to give rise to glucose-6-phosphate by the activity of the enzyme;
(1) invertase.
(2) pyruvate dehydrogenase.
(3) hexokinase.
(4) pyruvate kinase.

**117.** Which set of enzymes catalyse fermentation in yeast?
(1) Pyruvic acid dehydrogenase and alcohol dehydrogenase
(2) Pyruvate carboxylase and alcohol decarboxylase
(3) Pyruvic acid decarboxylase and alcohol dehydrogenase
(4) Pyruvic dehydrogenase and decarboxylase

**118.** Ground tissue of dicot root have;
(1) pericycle. (2) pith.
(3) cortex. (4) all of these

**119.** T.S of monocot root is characterised by the presence of;
(1) diarch bundle.
(2) large pith.
(3) many collenchyma.
(4) absence of endodermis.

**120.** Number of steps of substrate level phosphorylation in glycolysis is;
(1) two (2) three
(3) four (4) five

**121.** The epiblema of roots is equivalent to;
(1) pericycle. (2) endodermis.
(3) epidermis. (4) stele.

**122.** The terminal cytochrome of electron transport chain of respiration which donates electron to oxygen is_____ and contains_____. (respectively).

(1) cytochrome c; Fe
(2) cytochrome $a_3$; Cu
(3) cytochrome a; Cu
(4) cytochrome b; Fe

**123.** In link reaction, a 3C molecule (Pyruvic acid) is converted into a;

(1) 5C compound.
(2) 2C compound.
(3) 4C compound.
(4) 6C compound.

**124.** For chemiosmosis, the proton accumulation in mitochondria takes place in;

(1) matrix.
(2) outer membrane.
(3) inner membrane.
(4) intermembrane space.

**125.** Oxidative decarboxylation of pyruvic acid occurs in;

(1) inner membrane of chloroplast.
(2) stroma of chloroplast.
(3) mitochondrial matrix.
(4) perimitochondrial space.

**126.** What is the number of ATP consumed in first three steps of glycolysis if sucrose is the respiratory substrate?

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

**127.** Final product of oxidation in glycolysis is;

(1) pyruvate. (2) OAA.
(3) lactate. (4) malate.

**128.** Aerobic fate of pyruvate is occurred in;

(1) cytoplasm.
(2) mitochondria.
(3) peroxisome.
(4) chloroplast.

**129.** PGAL to PGA conversion involves formation of;

(1) ATP, NADPH.
(2) ADP, NADH + $H^{+\cdot}$
(3) ATP, NADH + $H^{+\cdot}$
(4) ATP, $NAD^{+\cdot}$

**130.** **Assertion (A):** In glycolysis glucose undergo partial oxidation.

**Reason(R):** In glycolysis $CO_2$ is formed at the end.

(1) Both **Assertion (A)** & **Reason (R)** are true and the **Reason (R)** is the correct explanation of the **Assertion (A)**.
(2) Both **Assertion (A)** & **Reason (R)** are true but the **Reason (R)** is not the correct explanation of the **Assertion (A)**.
(3) **Assertion (A)** is true statement but **Reason (R)** is false.
(4) Both **Assertion (A)** and **Reason (R)** are false statements

**131.** **Assertion(A):** Cuticle prevent loss of water from epidermis

**Reason(R):** Cuticle is made up of waxy thick layer and cover epidermis

(1) Both **Assertion (A)** & **Reason (R)** are true and the **Reason (R)** is the correct explanation of the **Assertion (A)**.
(2) Both **Assertion (A)** & **Reason (R)** are true but the **Reason (R)** is not the correct explanation of the **Assertion (A)**.
(3) **Assertion (A)** is true statement but **Reason (R)** is false.
(4) Both **Assertion (A)** and **Reason (R)** are false statements

**132.** Mark the **correct** statement.

(1) Bulliform cells are green
(2) Bast fibres are sclerenchymatous
(3) Bean shaped guard cell present in grasses
(4) Both (1) and (2)

**133.** Exarch condition of xylem

**(A)** Is found in roots
**(B)** Show protoxylem towards periphery
**(C)** Is found in monocot stem
**(D)** Is found in radial vascular bundles

How many of the above statements is/are **incorrect**?

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

**134.** EMP pathway is the another name of;

(1) ETS
(2) Oxidative phosphorylation
(3) Glycolysis
(4) Krebs' cycle

**135.** Few features are given.

**I.** Hypodermal sclerenchymatous

**II.** Conjoint vascular bundle

**III.** Unequal size vascular bundle

**IV.** Parenchymatous endodermis

**V.** Presence of protoxylem in vascular bundle

How many feature is/are belong to dicot stem?

(1) I, III and V (2) Only V

(3) II, IV and V (4) II and V

## SECTION – B

**136.** Dicot stem and monocot root are similar in;

(1) presence of radial vascular bundle.

(2) absence of hypodermis.

(3) presence of well-developed pith.

(4) absence of endodermis.

**137.** Casparian strips are present in;

(1) pericycle. (2) endodermis.

(3) bulliform cells. (4) epidermis.

**138.** Consider the following statements.

**Statement I:** Hypodermis is sclerenchymatous in maize stem.

**Statement II:** Unequal size vascular bundle present in maize stem.

Select the **correct** option.

(1) Only Statement I is correct

(2) Only Statement II is correct

(3) Both Statement I and Statement II are correct

(4) Both Statement I and Statement II are incorrect

**139.** In Glycolysis ATP is utilised at which step?

**a.** Conversion of glucose into glucose -6-phosphate

**b.** Conversion of fructose -6-phosphate to fructose -1, 6-bisphosphate

**c.** Conversion of phospho-enol-pyruvate into Pyruvate

Mark the **correct** option:

(1) a and b (2) b and c

(3) a and c (4) All of the these

**140.** Which of the following is **incorrect** about isobilateral leaf?

(1) Stomata is present on both surfaces

(2) Undifferentiated mesophyll

(3) Nearly the same size of vascular bundle is present all over leaf

(4) It is a monocot leaf

**141.** Root hairs are;

(1) acellular.

(2) unicellular.

(3) multicellular.

(4) multicellular and unicellular.

**142.** Identify the reaction of glycolysis that involves substrate level phosphorylation:

(1) 2-phosphoglycerate → Phosphoenolpyruvate

(2) 1-3-bisphosphoglyceric acid → 3-phosphoglyceric acid

(3) Fructose 1-6-bisphosphate → Triose phosphates

(4) Pyruvic acid → Phosphoenolpyruvate

**143.** Which of the following option have all cell/tissue is present as a ground tissue in plant organ?

(1) Epidermis, cortex, pericycle and phloem parenchyma

(2) Pith, pericycle, primary medullary rays, root hair and phellogen

(3) Cortex, trichome, Guard cell, endodermis and pericycle

(4) Pith, cortex, pericycle, mesophyll cell and hypodermis

**144.** Choose the **correct** set of statement w.r.t fermentation.

**i.** Less than seven percent of the energy in glucose is released.

**ii.** Hazardous process.

**iii.** $NADH + H^+$ is oxidised to $NAD^+$

**iv.** Net gain of four ATP per glucose.

(1) i, ii and iv (2) i, ii and iii

(3) ii, iii and iv (4) i, iii and iv

**145.** Which of the following group of features belong to dicot stem?

(1) Exarch, radial bundle and vascular bundle scattered

(2) Presence of interfasicular cambium and vascular bundle in ring

(3) Unequal size vascular bundle and endarch

(4) Exarch, conjoint and equal size vascular bundle

**146.** Which of the following is **present** in monocot stem?

(1) Phloem parenchyma

(2) Interfasicular cambium

(3) Phloem fiber

(4) Hypodermis

**147.** First oxidative decarboxylation reaction of aerobic respiration is catalysed by;
(1) pyruvate carboxylase.
(2) pyruvate dehydrogenase.
(3) pyruvate oxidase.
(4) None of above.

**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.** Exarch and polyarch vascular bundles occur in;
(1) monocot stem. (2) monocot root.
(3) dicot stem. (4) dicot root.

**150.** Match **List I** with **List II** and find out **correct** option.

| | List I | | LIST II |
|---|---|---|---|
| **(I)** | Cuticle | **(A)** | Guard cells |
| **(II)** | Bulliform cells | **(B)** | Single layer |
| **(III)** | Stomata | **(C)** | Waxy layer |
| **(IV)** | Epidermis | **(D)** | Empty colourless cell |

**Options:**
(1) (I)–(C), (II)–(D), (III)–(A), (IV)–(B)
(2) (I)–(A), (II)–(B), (III)–(C), (IV)–(D)
(3) (I)–(C), (II)–(B), (III)–(D), (IV)–(A)
(4) (I)–(C), (II)–(B), (III)–(A), (IV)–(D)

# (ZOOLOGY)

## SECTION - A

**151.** Match the list-I with list-II to find out the correct option.

| | List-I | | List-II |
|---|---|---|---|
| **I.** | Nissl's granule | **A.** | 2 |
| **II.** | Myelinated nerve fibre | **B.** | Dendrite |
| **III.** | Nodes of Ranvier | **C.** | Schwann cell |
| **IV.** | Types of synapse | **D.** | Gaps between two adjacent myelin sheath |

(1) I-B, II-C, III-D, IV-A
(2) I-B, II-D, III-C, IV-A
(3) I-C, II-B, III-D, IV-A
(4) I-A, II-B, III-C, IV-D

**152.** Association area is not responsible for:
(1) Memory
(2) Communication
(3) Sexual behaviour
(4) Inter sensory association

**153.** Which component of neural system would control the functioning of heart and stomach?
(1) Somatic neural system
(2) Only sympathetic nervous system.
(3) Only parasympathetic nervous system
(4) Both sympathetic and parasympathetic nervous system.

**154.** Which of the following characteristic is correct about dendrites?
(1) Non-functional degenerative axon
(2) Involved in carrying impulse away from the cell body.
(3) Involved in transmitting impulse toward the cell body
(4) Involved in transmitting impulse toward and away from the cell body.

**155.** Neurons are the specialised cells of nervous system in:
(1) humans only
(2) all vertebrates only
(3) mostly all animals including vertebrates and invertebrates
(4) fishes only

**156.** Co-ordination is considered as an important process in an animal body because ;
(1) It helps to maintain homeostasis
(2) It enables different organ to interact and function efficiently
(3) It ensure the normal functioning of vital organs
(4) All of the above

**157.** The nervous system of *Hydra* is composed of:
(1) brain and peripheral nerves
(2) network of neurons
(3) ganglia and nerve
(4) brain and nerve cell

**158.** When a neuron is not conducting any impulse i.e. resting the axonal membrane is
(1) Comparatively more permeable to $K^+$ and impermeable (nearly impermeable) to $Na^+$
(2) Impermeable to negatively charged proteins present in the axoplasm
(3) More permeable to $Na^+$ ions than $K^+$ ion
(4) Both (1) and (2)

**159.** ____ has very convoluted surface in addition space for many more neurons
(1) Medulla oblangata
(2) Cerebellum
(3) Pons
(4) All of the above

**160.** **Assertion (A):** Nerve impulse conduction is one way conduction.
**Reason (R):** Neurotransmitter are only present at axon terminals.
(1) Both **Assertion (A)** and **Reason (R)** are true and **Reason (R)** is a correct explanation of **Assertion (A)**
(2) Both **Assertion (A)** and **Reason (R)** are the true, but **Reason (R)** is not a correct explanation of **Assertion (A)**
(3) **Assertion (A)** is true, and **Reason (R)** is false.
(4) **Assertion (A)** is false and **Reason (R)** is true

**161.** Three major parts of brain stem are:-
(1) Only pons
(2) Pons, medulla oblongata, mid brain
(3) Hypothalamus
(4) Only medulla

**162.** Which of the following statement is/are **correct**?
(1) Electrical synapse is always slower than that across a chemical synapse.
(2) Electrical synapse are rare in our system.
(3) Neural system provided an disorganised network of point to point connections
(4) All of the above

**163.** In human beings, brain site information processing and control is performed by:
(1) PNS
(2) ANS
(3) CNS
(4) SA Node

**164.** Cerebral aqueduct is found in which part of brain?
(1) Mid brain
(2) Forebrain
(3) Hind brain
(4) All of the above

**165.** Receptor sites for neurotransmitter are present on;
(1) membranes of synaptic vesicles.
(2) pre-synaptic membrane.
(3) tips of axons.
(4) post-synaptic membranes.

**166.** Which of the following statement is **incorrect**?
(1) Brain is protected by the skull.
(2) Brain controls the human behaviour.
(3) Brain is mainly divided into two parts.
(4) Processing of vision and speech occur in human brain.

**167.** A multipolar neuron contain multiple;
(1) dendrites.
(2) axons.
(3) axon and dendrites.
(4) synaptic bulbs.

**168.** The cranial meninges from outer to inner region of the brain are:
(1) Duramater, arachnoid, piamater
(2) Arachnoid, piamater and duramater
(3) Piamater, duramater, arachnoid
(4) Arachnoid and piamater only

**169.** The thick filament in 'A' band are held together in the middle of this band by a thin membrane called.
(1) Z-Line
(2) M-Line
(3) H-Line
(4) O-Line

**170.** The muscle fatigue occurs due to accumulation of;
(1) $CO_2$ deposition.
(2) Lactic acid deposition.
(3) $O_2$ deposition.
(4) Creatine deposition.

**171.** Which of the following statements are **correct** regarding locomotion and movement?

**(A)** Movement is one of the significant features of living beings.

**(B)** Locomotion is generally for search of food and shelter only

**(C)** Human use limbs for changes in body postures and locomotion as well.

**(D)** All locomotion are movement but all movements are not locomotions.

(1) Only A, B (2) Only A, C, D

(3) Only B (4) Only B, C

**172.** __**A**__ band contains actin and is called __**B**__ band whereas the __**C**__ band called __**D**__ band contain myosin.

Choose the correct options for A, B, C and D to complete the given statement.

(1) A-Light, B-Isotropic, C-Dark, D-Anisotropic

(2) A-Dark, B-Isotropic, C-Light, D-Anisotropic

(3) A-Dark, B-Anisotropic, C-Light, D-Isotropic

(4) A-Light, B-Anisotropic, C-Dark, D-Isotropic

**173.** *Hydra* uses its tentacles for;

(1) locomotion.

(2) catching prey.

(3) reproduction.

(4) both (1) and (2).

**174.** Myosin head contains-

(1) ATPase

(2) ATP binding sites

(3) Active sites for actin

(4) All of the above

**175.** A neural signal reaching neuromuscular junction release a neurotransmitter namely.

(1) Dopamine (2) Acetylcholine

(3) GABA (4) Glycine

**176.** Joint present between carpal and metacarpal of thumb.

(1) Fibrous joint

(2) Saddle joint

(3) Ball and socket joint

(4) All of the above

**177.** Which one of the following is the **correct** description of a certain part of a normal human skeleton?

(1) First vertebra is axis which articulates with the occipital condyles.

(2) The $9^{th}$ and $10^{th}$ pairs of ribs are called the floating ribs.

(3) Joints are not essential for every type of movement

(4) Parietal bone and the temporal bone of the skull are joined by fibrous joint.

**178.** Cardiac/heart muscle are;

(1) Striated and involuntary

(2) Not fatigued

(3) Branched

(4) All of the above

**179.** Sarcomere is the area between

(1) 2H zones

(2) 2Z lines

(3) 2M lines

(4) 2A bands

**180.** Human adult vertebral formula is -

(1) $C_4T_8L_4S_8C_8$ (2) $C_7T_8L_5S_6C_7$

(3) $C_7T_{12}L_2S_1C_2$ (4) $C_7T_{12}L_5S_1C_1$

**181.** A normal human being has how many ear ossicle?

(1) 3 (2) 6

(3) 9 (4) 12

**182.** According to the sliding filament theory:

(1) Actin (thin filament) moves past myosin (thick filament)

(2) Myosin moves past actin

(3) Both myosin and actin move past each other

(4) None of the above

**183.** Gout is the inflammation of joints due to accumulation of -

(1) Urea crystal (2) $NH_3$

(3) Uric acid crystal (4) $CaCO_3$ crystal

**184.** Two halves of pelvic gridle articulate ventrally at a fibrocartilaginous joint called.

(1) Public symphysis

(2) Ilium

(3) Acromion depression

(4) Sutures

**185.** A cup shaped bone covering knee ventrally is called.

(1) Metatarsal (2) Tarsal
(3) Patella (4) Carpal

## SECTION - B

**186.** Brain controls the:

(1) Voluntary movement
(2) Balance of the body
(3) Functioning of vital organs
(4) All of the above

**187.** Match the list-I with list-II to find out the correct option.

| | **List-I** | | **List-II** |
|---|---|---|---|
| **I.** | False ribs | **A.** | $1^{st}$ to $7^{th}$ pair |
| **II.** | True ribs | **B.** | 8 |
| **III.** | Wrist bone | **C.** | $8^{th}$ to $10^{th}$ pair |
| **IV.** | Sternum | **D.** | 1 |

(1) I-A, II-B, III-C, IV-D
(2) IV-A, III-B, II-C, I-D
(3) I-C, II-B, III-A, IV-D
(4) I-C, II-A, III-B, IV-D

**188.** Which of the following vertebra in adult human are fused ones?

(1) Thoracic and lumber
(2) Thoracic and cervical
(3) Sacral and coccygeal
(4) Cervical and coccygeal

**189.** The functions of tropomyosin in skeletal muscle includes;

(1) sliding on actin to produce muscle, shortening.
(2) release $Ca^{+2}$ after initiation of contraction.
(3) acting as 'releasing protein' at rest by concerning up the sites where myosin binds to actin.
(4) generates ATP.

**190.** Human foot consists of 26 bones. What are the number of tarsals (ankle bones) metatarsals and phalanges?

(1) 7, 5, 14 (2) 5, 7, 14
(3) 1, 1, 5 (4) 5, 5, 5

**191.** **Statement I**-Axial skeleton comprises 80 bones
**Statement II**-The skull composed of 2 sets of bones.

(1) Both statement I and statement II are correct
(2) Statement I is correct but statement II is incorrect
(3) Statement I is incorrect, but statement II is correct
(4) Both statement I and statement II are incorrect.

**192.** For articulation of head of humerus a depression found in scapula is called-

(1) Acetabulum
(2) Manubrium
(3) Occipital
(4) Glenoid cavity

**193.** **Assertion (A):** Nervous system and endocrine system jointly co-ordinate and integrate activities of organs.
**Reason (R):** Endocrine system regulate all the activities of nervous system.

(1) **Assertion (A)** and **Reason (R)** are true and **Reason (R)** is the correct explanation of **Assertion**
(2) **Assertion (A)** and **Reason (R)** are correct and **Reason (R)** is not the correct explanation of **Assertion**
(3) **Assertion** is true, but **Reason** is false
(4) **Assertion** is false, but **Reason** is true

**194.** Visceral nervous system within human body;

**(A)** is the division of peripheral nervous system
**(B)** is the division of central nervous system
**(C)** impulse travel from visceral organ to CNS.
Which of the following option is the most appropriate?

(1) Only A and C are correct
(2) Only B is correct
(3) Only A and B are correct
(4) A, B, C are correct

**195.** The myelinated neurons are found in:

(1) Only cranial nerves
(2) Only spinal nerves
(3) Nerves of ANS
(4) Cranial and spinal nerves

**196.** The cerebral cortex contains -

(1) Motor areas
(2) Sensory areas
(3) Motor and sensory areas
(4) Motor, sensory and association areas.

**197.** The opening of ion-channels on post synaptic membrane generates -

(1) Excitatory potential
(2) Inhibitory potential
(3) No action potential
(4) Both (1) and (2)

**198.** All the listed structures are the parts of limbic system except -

(1) Hippocampus (2) Amygdala

(3) Hypothalamus (4) Medulla

**199.** Which part of the brain is responsible for thermo-regulation?

(1) Hypothalamus

(2) Corpus callosum

(3) Medulla oblongata

(4) Cerebrum

**200.** The basic structural component of a neuron are;

(1) cell body and axon only.

(2) cell body and dendrites only.

(3) axon and dendrites only.

(4) cell body axon and dendrites.

# Solution

## (BOTANY)

**101. (2)**

During respiration, three carbon (3C) acid i.e pyruvic acid is formed in cytoplasm by glycolysis.

**CLASS 11 NCERT PG NO.156**

**102. (2)**

From one molecule of pyruvic acid 4 NADH and 1$FADH_2$ molecules are produced in aerobic respiration. 4 NADH produce 12 ATP by ETS. 1$FADH_2$ produces 2 ATP by ETS. Total produced ATP = 14.

**CLASS 11 NCERT PG NO.159**

**103. (4)**

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

**CLASS 11 NCERT PG NO. 159**

**104. (3)**

3NADH + $H^+$ and 1 $FADH_2$ + 1 GTP

**CLASS 11 NCERT PG NO.159**

**105. (3)**

There is conversion of fructose-6-phosphate to fructose-1,6- Bisphosphate.

**CLASS 11 NCERT PG NO. 156**

**106. (2)**

The innermost layer of the cortex is called endodermis. It comprises a single layer of barrel-shaped cells without any intercellular spaces**.**

**CLASS 11 NCERT PG NO. 74**

**107. (2)**

Trichome are hair like structure can be soft or stiff.

**CLASS 11 NCERT PG NO. 72**

**108. (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. 162**

**109. (4)**

In electron transport system (ETS) in mitochondria, enzyme NADH dehydrogenase is associated with complex I

**CLASS 11 NCERT PG NO. 160**

**110. (1)**

Net gain of two ATP molecules during anaerobic respiration of one glucose molecule.

**CLASS 11 NCERT PG NO. 157**

**111. (3)**

In dicot root, the vascular cambium is completely secondary in origin.

**CLASS 11 NCERT PG NO.** 74

**112. (3)**

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

**CLASS 11 NCERT PG NO. 159**

**113. (1)**

* The size of the vascular bundles are dependent on the size of the veins.
* Palisade parenchyma are adaxially placed
* The abaxial epidermis generally bears more stomata than the adaxial epidermis.

**CLASS 11 NCERT PG NO. 76**

**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. 159**

**115. (4)**

The stomatal aperture, guard cells and the surrounding subsidiary cells are together called stomatal apparatus.

**CLASS 11 NCERT PG NO. 72**

**116. (3)**

Glucose is phosphorylated to give rise to glucose -6-phosphate by the activity of the enzyme hexokinase.

**CLASS 11 NCERT PG NO. 156**

**117. (3)**

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.

**CLASS 11 NCERT PG NO. 157**

**118.** (4)

All of these.

All tissues except epidermis and vascular bundles constitute the ground tissue.

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**119. (2)**

Pith is large and well developed.

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**120. (1)**

Two substrate level phosphorylation occurs in glycolysis.

* Conversion of BPGA to 3-phosphoglyceric acid (PGA)
* Conversion of phospho-enol-pyruvate into Pyruvate

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**121. (3)**

In roots, the outermost layer is epiblema.

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**122. (2)**

Cytochrome $a_3$; Cu

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**123. (2)**

In link reaction, acetyl CoA(2C) is produced.

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**124. (4)**

For chemiosmosis, the proton accumulation in mitochondria takes place in intermembrane space.

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**125. (3)**

Oxidative decarboxylation of pyruvic acid occurs in mitochondrial matrix.

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**126. (4)**

* 2 ATP are required for 1 glucose. 4 ATP are required for 1 sucrose.
* Sucrose is converted into glucose and fructose by the enzyme, invertase, and these two monosaccharides readily enter the glycolytic pathway.

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**127. (1)**

* Final product of oxidation in glycolysis is pyruvate.
* Glycolysis occurs in the cytoplasm of the cell and is present in all living organisms. In this process, glucose undergoes partial oxidation to form two molecules of pyruvic acid.

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**128. (2)**

* Aerobic fate of pyruvate is occurred in mitochondria.
* For the complete oxidation of glucose to $CO_2$ and $H_2O$, however, organisms adopt Krebs' cycle which is also called as aerobic respiration. This requires $O_2$ supply.
* Krebs' cycle occurs in mitochondrial matrix.

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**129. (3)**

PGAL to PGA conversion involves formation of ATP, NADH + $H^+$

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**130. (3)**

In glycolysis, the end product is pyruvate.

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**131. (1)**

The outside of the epidermis is often covered with a waxy thick layer called the cuticle which prevents the loss of water.

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**132. (2)**

Bean shaped guard cell present in dicot.

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**133. (3)**

Exarch xylems are found in monocot and dicot roots.

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**134. (3)**

EMP pathway is the another name of glycolysis

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**135. (3)**

In dicot stem:

* Hypodermal collenchyma.
* Conjoint vascular bundle.
* Equal size vascular bundle.
* Parenchymatous endodermis.
* Presence of protoxylem in vascular bundle.

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**136. (3)**

Presence of well-developed pith.

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**137. (2)**

The tangential as well as radial walls of the endodermal cells have a deposition of water-impermeable, waxy material suberin in the form of casparian strip.

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**138. (3)**

Both S-I and S-II are correct.

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**139. (1)**

In Glycolysis ATP is utilised in this steps:

* Conversion of glucose into glucose -6-phosphate
* Conversion of fructose -6-phosphate to fructose -1, 6-bisphosphate**.**

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**140. (3)**

The parallel venation in monocot leaves is reflected in the near similar sizes of vascular bundles (except in main veins) as seen in vertical sections of the leaves**.**

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**141. (2)**

The root hairs are unicellular elongations of the epidermal cells and help absorb water and minerals from the soil.

**Class 11th NCERT Pg No. 72**

**142. (2)**

1-3-bisphosphoglyceric acid → 3 - phosphoglyceric acid

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**143. (4)**

All tissues except epidermis and vascular bundles constitute the ground tissue. It consists of simple tissues such as parenchyma, collenchyma and sclerenchyma. Parenchymatous cells are usually present in cortex, pericycle, pith and medullary rays, in the primary stems and roots. In leaves, the ground tissue consists of thin-walled chloroplast containing cells and is called mesophyll.

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**144. (2)**

* In both lactic acid and alcohol fermentation not much energy is released; less than seven per cent of the energy in glucose is released and not all of it is trapped as high energy bonds of ATP. Also, the processes are hazardous – either acid or alcohol is produced.
* The reducing agent is $NADH+H^+$ which is reoxidised to $NAD^+$
* In anaerobic condition, net 2 ATP produced from one glucose.

**CLASS 11 NCERT PG NO. 157**

**145. (2)**

* In conjoint type of vascular bundles, the xylem and phloem are jointly situated along the same radius of vascular bundles. Such vascular bundles are common in stems and leave.
* In stems, the protoxylem lies towards the centre (pith) and the metaxylem lies towards the periphery of the organ. This type of primary xylem is called endarch.
* A large number of vascular bundles are arranged in a ring.

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**146. (4)**

Hypodermis is present in monocot stem.

* Phloem parenchyma is absent in most of the monocotyledons.
* Phloem fibres (bast fibres) are made up of sclerenchymatous cells. These are generally absent in the primary phloem.

**CLASS 11 NCERT PG NO. 76**

**147. (2)**

First Oxidative decarboxylation reaction of aerobic respiration is catalysed by pyruvate dehydrogenase.

**CLASS 11 NCERT PG NO. 159**

**148. (4)**

Complex IV have copper in it.

**CLASS 11 NCERT PG NO.160**

**149. (2)**

Monocot root.

**CLASS 11 NCERT PG NO.74**

**150. (1)**

* Cuticle – Waxy layer
* Bulliform cells – Empty colourless cell
* Stomata – Guard cells
* Epidermis – Single layer

**CLASS 11 NCERT PG NO. 72,77**

## (ZOOLOGY)

**151. (1)**

Nissl's granule – dendrite

Myelinated nerve fibre enveloped with → Schwann cell

Nodes of Ranvier – Gaps between two adjacent myelin sheath

Types of synapse-2.

**[New NCERT Class 11th Page No. 231, 232, 234]**

**152. (3)**

Association area is responsible for memory, communication and intersensory association. Limbic system is associated with sexual behaviour.

**[NCERT Class 11th Page No. 236]**

**153. (4)**

Autonomic nervous system is divided into sympathetic and parasympathetic nervous system. The autonomic neural system transmit impulses from the CNS to involuntary organ and smooth muscle of the body.

**[New NCERT Class 11th Page No. 231]**

**154. (3)**

Dendrites transmit impulse toward the cell body.

**[NCERT Class 11th Page No. 232]**

**155. (3)** Neurons are the specialised cells of nervous system in mostly all animals including vertebrate and in vertebrates.

**[NCERT Class 11th Page No. 231]**

**156. (4)**

Co-ordination is considered as an important process in an animal body because it helps to maintain homeostasis it enables different organ to interact and function efficiently. It ensure the normal functioning of vital organs.

**[NCERT Class 11th Page No. 230]**

**157. (2)**

The nervous system of *Hydra* is composed of network of neurons.

**[NCERT Class 11th Page No. 23]**

**158. (4)**

When a neuron is not conducting any impulse i.e. resting the axonal membrane is comparatively more permeable to potassium ion ($K^+$) and nearly impermeable to sodium ion ($Na^+$). Similarly the membrane is impermeable to negatively charged proteins present in the axoplasm.

**[NCERT Class 11th Page No. 232]**

**159. (2)**

Cerebellum has very convoluted surface in order to provide the additional space for many more neurons.

**[NCERT Class 11th Page No. 236]**

**160. (1)**

The axon terminals contain vesicles filled with neurotransmitter that's why nerve impulse conduction is one way conduction.

**[NCERT Class 11th Page No. 234]**

**161. (2)**

Pons, mid brain and medulla oblongata is comprising of brain stem.

**[NCERT Class 11th Page No. 236]**

**162. (2)**

Impulse transmission across an electrical synapse is always faster than that across a chemical synapse Neural system provides an organised network of point to point connections.

**[NCERT Class 11th Page No. 234]**

**163. (3)**

The CNS includes the brain and the spinal cord and is the site of information processing and control.

**[NCERT Class 11th Page No. 231]**

**164. (1)**

Cerebral aqueduct is found in mid brain.

**[NCERT Class 11th Page No. 236]**

**165. (4)**

Receptor are present on the post synaptic membrane.

**[NCERT Class 11th Page No. 235]**

**166. (3)**

The brain mainly divided into three parts forebrain. Midbrain and hindbrain

**[NCERT Class 11th Page No. 235]**

**167. (1)**

A multipolar neuron contain one axon and two or more dendrites found in the cerebral cortex..

**[NCERT Class 11th Page No. 232]**

**168. (1)**

The cranial meninges from outer to inner region are duramater, arachnoid and piamater.

**[NCERT Class 11th Page No. 235]**

**169. (2)**

The thick filament in a band are held together in the middle of this band by a thin fibrous membrane called M line.

**[NCERT Class 11th Page No. 220]**

**170. (2)**

The muscle fatigue occurs due to accumulation of lactic acid.

**[NCERT Class 11th Page No. 223]**

**171. (2)**

Human use limbs for changes in body posture and locomotion as well. Locomotion is generally for search of food, shelter, mate suitable breeding grounds favourable climatic conditions or to escape from enemies.

**[NCERT Class 11th Page No. 217]**

**172. (1)**

The light bands contain actin and is called I-bond or Isotropic band whereas the dark band called 'A' or Anisotropic band contains myosin.

**[NCERT Class 11th Page No. 219, 220]**

**173. (4)**

*Hydra* uses its tentacles for locomotion and catching prey.

**[NCERT Class 11th Page No. 217]**

**174. (4)**

Myosin head contain ATPase, ATP binding sites, active binding sites for actin.

**[NCERT Class 11th Page No. 221]**

**175. (2)**

A neural signal reaching neuromuscular junction a release a neurotransmitter is acetylcholine.

**[NCERT Class 11th Page No. 234]**

**176. (2)**

Saddle joint is present between carpal and metacarpal of thumb.

**[NCERT Class 11th Page No. 227]**

**177. (4)**

First vertebra is the atlas and it articulates with the occipital condyles; $8^{th}$, $9^{th}$, $10^{th}$ pair of ribs are called vertebro chondral ribs (false ribs).

**[NCERT Class 11th Page No. ]**

**178. (4)**

Cardiac muscle are muscle of heart which is striated involuntary, non-fatigued and branched.

**[NCERT Class 11th Page No. 219]**

**179. (2)**

Sarcomere is the area between 2Z lines.

**[NCERT Class 11th Page No. 223]**

**180. (4)**

Human adult vertebral formula is $C_7\ T_{12}\ L_5\ S_1\ C_1$.

**[NCERT Class 11th Page No. 225]**

**181. (2)**

A normal human being has 3 ear ossicles in each ear-Malleus, Incus and stapes.

**[NCERT Class 11th Page No. 224]**

**182. (1)**

According to the sliding filament theory contraction of a muscle fibre, takes place by the sliding of the thin filament over thick filament.

**[NCERT Class 11th Page No. 221]**

**183. (3)**

Gout is a inflammation of joint due to accumulation of uric acid crystals.

**[NCERT Class 11th Page No. 227]**

**184. (1)**

The two halves of the pelvic girdle meet ventrally to form the pubic symphysis.

**[NCERT Class 11th Page No. 226]**

**185. (3)**

A cup shaped bone called patella cover the knee ventrally.

**[NCERT Class 11th Page No. 226]**

**186. (4)**

Brain controls the voluntary movements, balance of the body functioning of vital involuntary organs.

**[NCERT Class 11th Page No. 235]**

**187. (4)**

Wrist bone – 8
False ribs – $8^{th}$ to $10^{th}$ pair
True ribs – $I^{st}$ to $7^{th}$ pair
Sternum – 1

**[NCERT Class 11th Page No. 225]**

**188. (3)**

Sacral and coccygeal vertebrae are fused one in adult human.

**[NCERT Class 11th Page No. 225]**

**189. (3)**

The functions of tropomyosin in skeletal muscle include acting as relaxing protein at rest by covering up the sites where myosin bind to actin.

**[NCERT Class 11th Page No. 222]**

**190. (1)**

Tarsal – 7
Metatarsal – 5
Phalanges - 14.

**[NCERT Class 11th Page No. 226]**

**191. (2)**

The skull composed of 2 sets of bone.

**[NCERT Class 11th Page No. 224]**

**192. (4)**

Glenoid cavity which articulate with the head of the humerus to form the shoulder joint.

**[NCERT Class 11th Page No. 226]**

**193. (3)**

Nervous system and endocrine system work together with co-ordination.

**[NCERT Class 11th Page No. 230]**

**194. (1)**

Visceral nervous system is a part of the peripheral nervous system, which impulse travel from the central nervous system to the visceral organs and from visceral organ to the CNS.

**[NCERT Class 11th Page No. 231]**

**195. (4)** The myelinated neuron are found in cranial and spinal nerves.

**[NCERT Class 11th Page No. 232]**

**196. (4)** The cerebral cortex contains motor, sensory and association area.

**[NCERT Class 11th Page No. 236]**

**197. (4)**

The opening of ion-channels on post synaptic membrane generates excitatory and inhibitory potential.

**[NCERT Class 11th Page No. 235]**

**198. (4)**

Hippocampus, Amygdala and Hypothalamus is a part of limbic system.

**[NCERT Class 11th Page No. 231]**

**199. (1)**

Hypothalamus is the responsible for thermo regulation.

**[NCERT Class 11th Page No. 236]**

**200. (4)**

Cell body, axon and dendrite are structural component of a neuron.

**[NCERT Class 11th Page No. 236]**