BIOLOGY

NEET & AIIMS

MOCK TEST 21

Example

1. Action spectrum of photosynthesis resembles roughly the

A. Cholorophyll a

B. Chlorophyll b

C. Carotene

D. Xanthophyll

Answer: A

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2. Products of light reaction are

A. O_2 and CO_2

B. CO_2 and H_2O

C. ATP and NADPH

D. ATP and CO_2

Answer: C

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3. Where does dark reaction of photosynthesis take place?

A. Thylakoid lumen

B. Thylakoid membrane

C. Stoma of the chloroplast

D. Matrix of mitochondria

Answer: C

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4. Pigment molecule present at reaction centre of PS-I and PS-II respectively are

A. Chl-a and chl-a

B. chl-a and chl-b

C. chl-b and chl-a

D. chl-b and chl-b

Answer: A

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5. During photosynthesis. the site for light reaction is

A. Stroma of chloroplast

B. Thylakoids of the chloroplast

C. ds circular DNA of the chloroplast

D. Both (1) & (2)

Answer: B

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6. Read the following statements and choose ones- (A) Carotenoids protect chlorophyll a from photooxidation, (B) Dark reactions are not directly light driven, ©Chlorophyll a

molecule shows maximum absorption in red and blue regions of the visible spectrum of light, (D) Light harvesting complexes are composed of hundreds of pigment molecules bound to lipids only.

A. A,B &C

B. B,D &C

C. A,C &D

D. D,B &A

Answer: A

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7. In PS-II the reaction centre chl-a has an absorption peak at (i) wavelength of (ii) causing electrons to become excited

A. (i) 400nm, (ii) Red light

B. (i) 680nm, (ii) Red light

C. (i) 700nm, (ii) Red light

D. (i) 700nm, (ii) blue light

Answer: B

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8. The photochemical phase of photosynthesis includes,(a) water splitting (b) light absorption © oxygen release (d) synthesis of NADPH (e) synthesis of starch

A. Only (a) & (b)

B. (b),© & (e)

C. ©,(d) & (e)

D. All except (e)

Answer: D

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9. The process of cyclic photophosphorylation in green algae

A. Involves PS-I

B. Synthesis ATP and NAPDH

C. Takes place in the stroma lamella membrane

D. Both (1) & (3)

Answer: D

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10. The protons and oxygen formed during photolysis of water are released

A. Within the thylakoid lumen

B. Outside the chloroplast

C. In the stroma of the chloroplast

D. In the vacuole of the cell

Answer: A

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11. The electrons released during splitting of water are used to replace electrons removed from

A. PS-I

B. PS-II

C. Cytochrome complex

D. NADP reductase complex

Answer: B

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12. Cyclic photophosphorylation occurs when only light of wavelengths _____ are available.

(i) Below 680 nm (ii) Beyond 680 nm

(iii) 400 nm and below (iv) Beyond 400 nm

A. Below 300nm

B. Beyond 680nm

C. Below 400nm

D. Beyond 300nm

Answer: B

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13. Non-cyclic photophosphorylation differs from cyclic photophosphorylation

A. As it requires light energy

B. In synthesis of ATP

C. As it requires only PS-I

D. As it involves photolysis of water

Answer: D

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14. Biosynthetic phase of photosynthesis

A. Involves use of ATP and NADPH to form food

B. Continues for long time if light is unavailable

C. Occurs in thylakoids only

D. Depends on light directly

Answer: A

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15. The primary CO_2 acceptor molecule during the C_3 cycle is a

A. 5-carbon ketose sugar

B. Hexose sugar

C. RuBP

D. Both (1) & (3)

Answer: D

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16. chemiosmotic hypothesis

A. Was explained by P. Mitchell

B. Proves that proton gradient is not required for ATP synthesis

C. Explains how ATP is synthesized in the chloroplast

D. Both (1) & (3)

Answer: D

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17. The total number of ATP and NADPH required to fix six molecules of CO_2 in C_3 plants are

A. ATP-12, NADPH-12

B. ATP-5, NADPH-3

C. ATP-18, NADPH-12

D. ATP-12, NADPH-18

Answer: C

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18. How many full turns of the Calvin cycle are required to make one molecule of glucose

A. 5

B. 4

C. 12

D. 6

Answer: D

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19. The most crcial step of the Calvin cycle is

A. Reduction

B. Carboxylation

C. Regeneration

D. Decarboxylation

Answer: C

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20. The most abundant enzyme on earth

A. Has much greater affinity for CO_2 than O_2

B. Has active site for O_2 only

C. Has carboxylase activity only

D. Both (1) & (3)

Answer: A

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21. Living organisms are capable of extracting energy from (i) and store it in the form of (ii)

A. (i) Oxidisable substance, (ii) Starch only

B. (i) Light, (ii) Glucose only

C. (i) Oxidisable substance, (ii) Bond energy

D. (i) Sun directly, (ii) Bond energy

Answer: C

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22. Read the following statements and mark the correct option- (i)Grana lamellae have both PS-I and PS-II, (ii) ph inside the thylakoid lumen decreases when H^+ gradient is established across thlakoid membrane, (iii) During reduction of NADP to NADPH + H^+ protons are removed from thylakoid lumen, (iv) Melvin Calvin used radioctive `14^C in a dicot plant to elucidate path of carbon in biosynthetic phase of photosynthesis.

A. (i) and (iii) are correct

B. (i) and (ii) are correct

C. (i) and (iv) are correct

D. (i) and (ii) are incorrect

Answer: B

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23. The first stable product in C_4 pathway is

A. Oxaloacetic acid

B. Phosphoenolpyruvate

C. Ribulose-1, 5-biphosphate

D. Malic acid

Answer: A

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24. C_4-plants are well adapted to

A. Dry tropical region

B. Temperate regions

C. Arctic regions

D. Low temperature

Answer: A

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25. Which of the following do not show Kranz anatomy in their leaves ?

A. Maize

B. Ssorghum

C. China rose

D. Both (1) & (2)

Answer: C

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26. Choose incorrect statement w.r.t mesophyll cells ofC_4-plants

A. Lack of RuBisCO enzyme

B. C_4-acid is broken down to release CO_2 amd a 3-carbon molecule

C. Primary CO_2 acceptor molecule is PEP

D. Have a PEP case enzyme

Answer: B

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27. In C_4 plants , numbers of ATP and NADPH molecules required to fiz 2 molecules of CO_2 are respectively

A. 6 & 10

B. 10 & 6

C. 4 & 10

D. 10 & 4

Answer: D

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28. Most of the annelids are

A. Terrestrial

B. Free living

C. Ectoparasites

D. Endoparasites

Answer: B

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29. Locomotory structure of Leech is/are

A. Parapodia

B. Setae

C. Muscle

D. All of these

Answer: C

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30. Choose the correct match

A. Nereis – Internal fertilisation

B. Pheretima – Internal fertilisation

C. Hirudinaria – Internal fertilisation

D. Ascaris – External fertilisation

Answer: C

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31. Excretory waste of Pheretima is

A. Ammonia

B. Urea

C. Uric acid

D. Both (1) & (2)

Answer: D

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32. Consider the following characteristic features. (a) Closed vascular system (b) External fertilisation (c) Dioecious (d) Double ventral nurve cord The above features characterise

A. Leech

B. Earthworm

C. Sandworm

D. Bloodworm

Answer: C

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33. Which of the following is a sanguivore and characterised by the presence of botryoidal tissue?

A. Tubifex

B. Aphrodite

C. Megascolex

D. Hirudinaria

Answer: D

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34. Read the following features: (a) Neurogenic heart (b) Haemocoel (c) Parapodia with setae is locomotory structure (d) Double ventral nurve cord Which of the above is/are characteristic features of Nereis?

A. only (a)

B. (a) and (c) only

C. (c) and (d) only

D. (a) , (c) and (d)

Answer: D

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35. Trochophore larva is a free swimming larva in

A. Nereis, Aphrodite, Chaetopterus

B. Nereis, Pheretima, Pontobdella

C. Tubifex, Bonellia, Hirudinaria

D. Pheretima, Lumbricus, Megascolex

Answer: A

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36. Which of the following cannot be considered as characteristic feature of arthropods?

A. Jointed appendages

B. Direct development

C. Schizocoelom

D. Bilateral symmetry

Answer: B

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37. Which of the following is a correct match between organism and its respective respiratory structure?

A. Prawn — Tracheal system

B. King crab — Book lungs

C. Scorpion — Gills

D. Centipede — Tracheal system

Answer: D

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38. Read the following statements. Statement (A) : Malpighian tubules help in removal of nitrogenous waste from body fluid. Statement

(B) : Nitrogenous waste is removed out through separate excretory pore. Choose the correct option

A. Both statements (A) and (B) are correct

B. Statement (A) is incorrect and (B) is correct

C. Statement (A) is correct and (B) is incorrect

D. Both statements (A) and (B) are incorrect

Answer: C

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39. Which of the following statements is correct regarding arthropods?

A. In all arthropods fertilisation is internal but development may be direct or indirect

B. Grub is the larval from of mosquitoes

C. Arthropods are mostly monoecious

D. Nymph resembles the adult in mode of life but differs in structure

Answer: D

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40. Which of the following organisms exhibits hemimetabolous development?

A. Cockroach

B. Bed bug

C. Lice

D. May flies

Answer: A

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41. Which of the following is not present in life cycle of Locusts?

A. Egg

B. Nymph

C. Naiad

D. Imago

Answer: C

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42. Which of the following structures in mosquitoes help in perceiving vibrations?

A. Johnston's organs present on last abdominal segment

B. Halters present on antennae

C. Johnston's organs present on antennae

D. Halters present on 2nd pair of wings

Answer: C

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43. Which of the following mouth parts occurs in pair?

A. Labium

B. Mandible

C. Labrum

D. Hypopharynx

Answer: B

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44. Which of the following statements is incorrect regarding honey bees?

A. Bee wax is produced by abdominal glands of workers

B. Except queen bee all castes are sterile

C. Scout bees perform round dance when food source is located at $< 75m$ distance

D. Potential queen larvae are given royal jelly while the rest of larvae are given

bee bread

Answer: B

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45. Which of the following is an incorrect match of vector and the disease it transmits?

A. Xenopsylla — Bubonic Plague

B. Culex — Elephantiasis

C. Aedes — Dengue

D. Phlebotomus — Sleeping sickness

Answer: D

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46. Which of the following is not a beneficial insect?

A. Apis

B. Laccifer

C. Locusta

D. Bombyx

Answer: C

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47. Which of the following givens the correct description of various structures present in a class?

A. 

B. 

C. 

D. 

Answer: B

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48. Which of the following is not a member of class Insecta?

A. Crayfish

B. Silverfish

C. Glow worm

D. Aphid

Answer: A

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49. Consider the following statements

(a) In both crustaceans and insects body is divisible into cephalothorax and abdomen.

(b) In millipedes throacic and abdominal segments bear 2 pairs of legs.

(c) Tehmina is the other name for metathoracic wings of insects.

(d) Peripatus is a connecting link between Annelida and Arthropoda.

How may among the above mentioned statements is/are correct?

A. 4

B. 3

C. 1

D. 2

Answer: C

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