DU PhD in Plant Molecular Biology N Biotech

Topic:- PMBB PHD

1) The author of the book 'Dancing Naked in the Mind Field' is:[Question ID = 8933]

1. Kary B. Mullis. [Option ID = 35729]
2. C. Darwin. [Option ID = 35730]
3. J-B. Lamarck. [Option ID = 35731]
4. J. Doudna. [Option ID = 35732]

2) Opines used as carbon source by *Agrobacterium* are the derivatives of:
[Question ID = 8934]

1. proteins.

   [Option ID = 35733]
2. lipids.

   [Option ID = 35734]
3. amino acids.

   [Option ID = 35735]
4. nucleic acids.

   [Option ID = 35736]

3) The approximate wavelength of the glow light emitted by the firefly luciferase is:[Question ID = 8935]

1. 362 nm. [Option ID = 35737]
2. 462 nm. [Option ID = 35738]
3. 562 nm. [Option ID = 35739]
4. 662 nm. [Option ID = 35740]

4) The study of the phenotypic changes is called:[Question ID = 8936]

1. phenology. [Option ID = 35741]
2. glycomics. [Option ID = 35742]
3. metabolomics. [Option ID = 35743]
4. phenomics. [Option ID = 35744]

5) For the analysis of proteins, ampholytes are used for:[Question ID = 8937]

1. estimation of proteins. [Option ID = 35745]
2. staining of proteins. [Option ID = 35746]
3. preparation of SDS-gel. [Option ID = 35747]
4. preparation of isoelectric focusing gel. [Option ID = 35748]

6) Which of the following components of photosynthetic electron transport chain is located in both, stacked grana lamellae as well as in unstacked stroma lamellae?[Question ID = 8938]

1. ATP synthase. [Option ID = 35749]
2. PSII. [Option ID = 35750]
3. PSI. [Option ID = 35751]
4. Cytochrome b_6f. [Option ID = 35752]

7) Anoxygenic photosynthetic bacteria contain only:[Question ID = 8939]

1. one reaction center of only Fe-S type. [Option ID = 35753]
2. one reaction center of only quinone type. [Option ID = 35754]
3. one reaction center of either Fe-S or quinone type. [Option ID = 35755]
4. two reaction centers, one of Fe-S type and another of quinone type. [Option ID = 35756]

8) Which component of the photosynthetic electron transport chain is not involved in cyclic electron transport chain? [Question ID = 8940]

1. Plastoquinone. [Option ID = 35757]
2. PSI. [Option ID = 35758]
3. PSII. [Option ID = 35759]
4. cytochrome b6f complex. [Option ID = 35760]

9) Which of the following are branched chain amino acids?[Question ID = 8941]

1. Isoleucine, leucine and valine. [Option ID = 35761]
2. Glycine, Isoleucine and leucine. [Option ID = 35762]
3. Glycine, Alanine and leucine. [Option ID = 35763]
4. Alanine, Isoleucine and leucine. [Option ID = 35764]

10) Pyruvate kinase enzyme produces ATP in:[Question ID = 8942]

1. mitochondria only. [Option ID = 35765]

2. chloroplasts only. [Option ID = 35766]
3. cytosol only. [Option ID = 35767]
4. cytosol and chloroplasts. [Option ID = 35768]

11) Which of the following enzymes senses the level of sugars to regulate photosynthesis?[Question ID = 8943]

1. Hexokinase 1. [Option ID = 35769]
2. Fructokinase 1. [Option ID = 35770]
3. Phosphofructokinase 1. [Option ID = 35771]
4. Fructose 1,6 phosphatase. [Option ID = 35772]

12) Which of the following enzymes is involved in generation of heat?[Question ID = 8944]

1. Cytochrome oxidase. [Option ID = 35773]
2. NADH dehydrogenase. [Option ID = 35774]
3. Succinate dehydrogenase. [Option ID = 35775]
4. Alternative oxidase. [Option ID = 35776]

13) Addition of the 5' terminal nucleotide to mRNA is catalyzed by:[Question ID = 8945]

1. guanylyl-transferase. [Option ID = 35777]
2. adenylyl-transferase. [Option ID = 35778]
3. adenylyl cyclase. [Option ID = 35779]
4. uridylyl-transferase. [Option ID = 35780]

14) Proteasomes are involved in degradation of polypeptides marked with:[Question ID = 8946]

1. ubiquitin moiety. [Option ID = 35781]
2. phosphate group. [Option ID = 35782]
3. sulfhydryl group. [Option ID = 35783]
4. methyl group. [Option ID = 35784]

15) Somatic hypermutation occurs in:[Question ID = 8947]

1. T cells. [Option ID = 35785]
2. B cells. [Option ID = 35786]
3. stem cells. [Option ID = 35787]
4. all somatic cells. [Option ID = 35788]

16) At least, one of the chloroplast RNA polymerases involved in mRNA synthesis is like:[Question ID = 8948]

1. RNA polymerase I. [Option ID = 35789]
2. RNA polymerase II. [Option ID = 35790]
3. RNA polymerase III. [Option ID = 35791]
4. bacterial RNA polymerase. [Option ID = 35792]

17) Half-life of Carbon-14 is:[Question ID = 8949]

1. 2.7 years. [Option ID = 35793]
2. 87.5 years. [Option ID = 35794]
3. 432.2 years. [Option ID = 35795]
4. 5730 years. [Option ID = 35796]

18) In the cAMP pathway, the breakdown of cAMP is catalyzed by: [Question ID = 8950]

1. phosphodiesterase. [Option ID = 35797]
2. adenylyl cyclase. [Option ID = 35798]
3. phospholipase D. [Option ID = 35799]
4. phosphotransferase. [Option ID = 35800]

19) Which plant hormone involves histidine kinase (two-component) signaling system?[Question ID = 8951]

1. ABA. [Option ID = 35801]
2. GA. [Option ID = 35802]
3. Ethylene. [Option ID = 35803]
4. Auxin. [Option ID = 35804]

20) The enzyme that catalyzes the X-p to X conversion is known as a:[Question ID = 8952]

1. kinase. [Option ID = 35805]
2. phosphatase. [Option ID = 35806]
3. reductase. [Option ID = 35807]
4. phospholipase. [Option ID = 35808]

21) Which of the molecular probes is used for staining mitochondria?[Question ID = 8953]

1. FITC. [Option ID = 35809]
2. Fura-2. [Option ID = 35810]
3. DAPI. [Option ID = 35811]
4. Rhodamine 123. [Option ID = 35812]

22) Guard cells of stomata are closed by loss of turgor pressure because of efflux of: [Question ID = 8954]

1. K^+ and Cl^-. [Option ID = 35813]
2. HCO^{3-} and Br^-. [Option ID = 35814]

3. Na^+ and Cl^-. [Option ID = 35815]
4. Mg^{2+} and NO_3^-. [Option ID = 35816]

23) ABI1 and ABI2 are the genes involved in:[Question ID = 8955]

1. ABA signaling. [Option ID = 35817]
2. ABA biosynthesis. [Option ID = 35818]
3. ABA degradation. [Option ID = 35819]
4. ABA transport. [Option ID = 35820]

24) In which of the following does Brefeldin A (BFA) block the intracellular protein transport?[Question ID = 8956]

1. ER, Golgi apparatus to endosome. [Option ID = 35821]
2. Mitochondria, ER to nucleus. [Option ID = 35822]
3. ER, chloroplast to mitochondria. [Option ID = 35823]
4. Chloroplast, Golgi apparatus to mitochondria. [Option ID = 35824]

25) 'Patch-clamp' and 'two-electrode voltage clamp' are the experimental methodologies for studying functional analysis of:[Question ID = 8957]

1. cytoskeletal proteins. [Option ID = 35825]
2. ion channels. [Option ID = 35826]
3. transcription factors. [Option ID = 35827]
4. enzymes. [Option ID = 35828]

26) Nucleosome is involved in:[Question ID = 8958]

1. DNA packaging. [Option ID = 35829]
2. RNA packaging. [Option ID = 35830]
3. Protein transport. [Option ID = 35831]
4. DNA recombination. [Option ID = 35832]

27) Mike Bevan is credited with the construction of which of the following plasmid vectors?[Question ID = 8959]

1. pBIN19. [Option ID = 35833]
2. pBR322. [Option ID = 35834]
3. pUC8. [Option ID = 35835]
4. pPZP. [Option ID = 35836]

28) In the trp operon, tryptophan is a:[Question ID = 8960]

1. repressor. [Option ID = 35837]
2. co-repressor. [Option ID = 35838]
3. inducer. [Option ID = 35839]
4. activator. [Option ID = 35840]

29) Haustoria are:[Question ID = 8961]

1. swollen glandular structures formed during differentiation of necrotrophic fungi. [Option ID = 35841]
2. regions in the root, where fungal cells multiply. [Option ID = 35842]
3. invaginated structures responsible for extracting plant nutrients by biotrophic fungi. [Option ID = 35843]
4. vascular structures responsible for injecting toxins by necrotrophic fungi. [Option ID = 35844]

30) Viroids are:[Question ID = 8962]

1. viruses, which can cause disease in association with bacteria. [Option ID = 35845]
2. viruses, which can cause disease in association with fungi. [Option ID = 35846]
3. autonomously replicating DNA molecules which can cause disease. [Option ID = 35847]
4. autonomously replicating RNA molecules which can cause disease. [Option ID = 35848]

31) An example of a volatile signalling compound in plants is:[Question ID = 8963]

1. methyl jasmonate. [Option ID = 35849]
2. oxalic acid. [Option ID = 35850]
3. pyruvic acid. [Option ID = 35851]
4. acetosyringone. [Option ID = 35852]

32) Which of the following acts as an intermediate in the defense signalling pathway for salicylic acid?[Question ID = 8964]

1. Camalexin. [Option ID = 35853]
2. JAR1. [Option ID = 35854]
3. ETR1. [Option ID = 35855]
4. NPR1. [Option ID = 35856]

33) Which of the following enzymes catalyzes a rate-limiting step in the biosynthesis of terpenoids?[Question ID = 8965]

1. Phenylalanine ammonia lyase. [Option ID = 35857]
2. Pyruvate lyase. [Option ID = 35858]
3. Hydroxymethyl glutaryl CoA reductase. [Option ID = 35859]
4. Chalcone synthase. [Option ID = 35860]

34) An important constituent of Reactive Oxygen Species (ROS) in plants is:[Question ID = 8966]

1. nitric oxide. [Option ID = 35861]
2. hydrogen peroxide. [Option ID = 35862]

3. sulphur dioxide. [Option ID = 35863]
4. leghemoglobin. [Option ID = 35864]

35) A naturally rich source of cytokinins is:[Question ID = 8967]

1. wheat grains. [Option ID = 35865]
2. coconut water. [Option ID = 35866]
3. prunes. [Option ID = 35867]
4. dates. [Option ID = 35868]

36) Insectivorous plants grow in:[Question ID = 8968]

1. nitrogen rich soil. [Option ID = 35869]
2. nitrogen deficient soil. [Option ID = 35870]
3. potassium deficient soil. [Option ID = 35871]
4. carbohydrate rich soil. [Option ID = 35872]

37) Increased genetic diversity arising during tissue culture is due to:[Question ID = 8969]

1. maternal effect. [Option ID = 35873]
2. temporal modification. [Option ID = 35874]
3. somaclonal variation. [Option ID = 35875]
4. culture shock. [Option ID = 35876]

38) Somatic recombination is observed during:[Question ID = 8970]

1. light perception. [Option ID = 35877]
2. colour perception. [Option ID = 35878]
3. antibody generation. [Option ID = 35879]
4. gametogenesis. [Option ID = 35880]

39) Brassinosteroids were first reported in:

[Question ID = 8971]

1. *Arabidopsis thaliana.*

   [Option ID = 35881]
2. *Brassica napus.*

   [Option ID = 35882]
3. *Brassica juncea.*

   [Option ID = 35883]
4. *Phaseolus vulgaris.*

   [Option ID = 35884]

40) Which of the following DNA binding proteins interacts with DNA in a sequence specific manner?[Question ID = 8972]

1. Histone H3. [Option ID = 35885]
2. DNA polymerase. [Option ID = 35886]
3. C2-H2 Zinc Finger. [Option ID = 35887]
4. RNA polymerase. [Option ID = 35888]

41) During DNA sequencing, what will heterozygous single nucleotide substitution look like on an electropherogram? [Question ID = 8973]

1. Two peaks of equal height at the same position. [Option ID = 35889]
2. One peak twice the height of those around it. [Option ID = 35890]
3. Two peaks in the same position, one twice the height of the other. [Option ID = 35891]
4. Three peaks of equal height at the same position. [Option ID = 35892]

42) Which statement best describes the main distinction between the origin of the two classes of small regulatory RNAs: siRNA and miRNA?[Question ID = 8974]

1. siRNAs originate within the cell cytoplasm; miRNAs originate from the cell genome. [Option ID = 35893]
2. siRNAs originate from dsRNA; miRNAs originate from ssRNA. [Option ID = 35894]
3. miRNAs are expressed whenever siRNAs are unable to appropriately degrade RNA sequences. [Option ID = 35895]
4. miRNAs are processed from dsRNA viruses; siRNAs are processed from ssRNA viruses. [Option ID = 35896]

43) During siRNA-mediated gene silencing in human cell lines, the RNA-induced Silencing Complex (RISC) is composed of which of the following proteins?[Question ID = 8975]

1. DICER1, TRBP and AGO2. [Option ID = 35897]
2. DICER1, TRBP and AGO1. [Option ID = 35898]
3. DROSHA and DGCR8. [Option ID = 35899]
4. DICER, DROSHA and AGO1. [Option ID = 35900]

44) The expression levels of a gene can be monitored using the following techniques:[Question ID = 8976]

1. Southern hybridization, quantitative RT-PCR. [Option ID = 35901]
2. Semi-quantitative RT-PCR, nuclear run-on assay. [Option ID = 35902]
3. Southern hybridization, nuclear run-on assay. [Option ID = 35903]
4. Quantitative PCR, DNase footprinting assay. [Option ID = 35904]

45) 'Yeast one-hybrid assay' is employed to determine interaction between:[Question ID = 8977]

1. protein and protein. [Option ID = 35905]
2. DNA and protein. [Option ID = 35906]
3. DNA and RNA. [Option ID = 35907]
4. DNA and DNA. [Option ID = 35908]

46) Homopolymer tailing of cDNA can be achieved with:

[Question ID = 8978]

1. Klenow polymerase.

   [Option ID = 35909]
2. Terminal deoxynucleotidyl transferase.

   [Option ID = 35910]
3. T4 DNA ligase.

   [Option ID = 35911]
4. *Taq* DNA polymerase.

   [Option ID = 35912]

47) Which of the following is employed for end-labeling of DNA using T4 polynucleotide kinase?

[Question ID = 8979]

1. α-P^{32} UTP.

   [Option ID = 35913]
2. γ-P^{32} dATP.

   [Option ID = 35914]
3. β-P^{32} dATP.

   [Option ID = 35915]
4. α-P^{32} dATP.

   [Option ID = 35916]

48) Which of the following file formats contain both DNA sequence and base quality scores?[Question ID = 8980]

1. FASTA. [Option ID = 35917]
2. FASTQ. [Option ID = 35918]
3. GFF. [Option ID = 35919]
4. BAM. [Option ID = 35920]

49) The commonly used BLAST sequence search tool performs:[Question ID = 8981]

1. pairwise local alignment. [Option ID = 35921]
2. pairwise global alignment. [Option ID = 35922]
3. multiple local alignment. [Option ID = 35923]
4. multiple global alignment. [Option ID = 35924]

50) Which of the following algorithms can be used to search a protein database?[Question ID = 8982]

1. BLASTn. [Option ID = 35925]
2. BLASTx. [Option ID = 35926]
3. tBLASTn. [Option ID = 35927]
4. mFOLD. [Option ID = 35928]