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DU PhD in Plant Molecular Biology N Biotech

Topic:- DU_J19_PHD_PMBB

1) Which of the following statements about G proteins is TRUE?

[Question ID = 12345]

1. These bind to and are regulated by pyrimidine nucleotides [Option ID = 19378]
2. These are involved in signal amplification [Option ID = 19377]
3. These get activated when bound to GTP [Option ID = 19379]
4. These get activated when bound to cGMP [Option ID = 19380]

Correct Answer :-

- These are involved in signal amplification [Option ID = 19377]

2) Which of the following statements about sporopollenin is FALSE?

[Question ID = 12347]

1. Sporopollenin can withstand high temperatures and strong acids [Option ID = 19388]
2. Sporopollenin is one of the resistant organic materials [Option ID = 19386]
3. Exine has apertures called germ pores where sporopollenin is present [Option ID = 19385]
4. Exine is made up of sporopollenin [Option ID = 19387]

Correct Answer :-

- Exine has apertures called germ pores where sporopollenin is present [Option ID = 19385]

3) Which of the following compounds is a phytoalexin?

[Question ID = 12327]

1. Resveratrol [Option ID = 19306]
2. Calmodulin [Option ID = 19307]
3. Ferritin [Option ID = 19308]
4. Leghemoglobin [Option ID = 19305]

Correct Answer :-

- Leghemoglobin [Option ID = 19305]

4) Which of the following class of compounds is a natural feeding deterrent against herbivores in plants?

[Question ID = 12330]

1. Pyrethroids [Option ID = 19318]
2. Sterols [Option ID = 19317]
3. Defensins [Option ID = 19319]

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4. Carotenoids [Option ID = 19320]

Correct Answer :-

- Sterols [Option ID = 19317]

5) Which of the following versions of BLAST can be used to search DNA sequence against a protein database?

[Question ID = 12336]

1. BLAST-X. [Option ID = 19344]
2. BLAST-P [Option ID = 19341]
3. BLAST-N [Option ID = 19342]
4. Mega-BLAST [Option ID = 19343]

Correct Answer :-

- BLAST-P [Option ID = 19341]

6) Which of the following is used for measurement of intracellular Ca^{2+} in plant cells?

[Question ID = 12332]

1. mCherry [Option ID = 19328]
2. Yellow Chameleon 3.6 [Option ID = 19326]
3. Rho-GFP [Option ID = 19327]
4. Citrulline [Option ID = 19325]

Correct Answer :-

- Citrulline [Option ID = 19325]

7) Which of the following is a methyl group donor?

[Question ID = 12317]

1. Azacytidine [Option ID = 19268]
2. 5-methyl uracil [Option ID = 19267]
3. Methionine [Option ID = 19265]
4. S-adenosylmethionine [Option ID = 19266]

Correct Answer :-

- Methionine [Option ID = 19265]

8) Which of the following is a major component of RISC?

[Question ID = 12353]

1. AGO [Option ID = 19409]
2. HYL1 [Option ID = 19410]
3. HEN1. [Option ID = 19412]
4. Dicer [Option ID = 19411]

Correct Answer :-

- AGO [Option ID = 19409]

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9) Which of the following is a proteinaceous elicitor of defence response, secreted by *Pseudomonas syringae* ?

[Question ID = 12328]

1. Polygalacturonase [Option ID = 19310]
2. Systemin [Option ID = 19309]
3. Harpin [Option ID = 19312]
4. MAP kinase [Option ID = 19311]

Correct Answer :-

- Systemin [Option ID = 19309]

10) Which of the following is a small RNA?

[Question ID = 12314]

1. mRNA [Option ID = 19253]
2. hnRNA [Option ID = 19256]
3. rRNA [Option ID = 19255]
4. miRNA [Option ID = 19254]

Correct Answer :-

- mRNA [Option ID = 19253]

11) Which of the following is predominantly located in granal lamellae of chloroplast?

[Question ID = 12315]

1. Cytochrome b_6f [Option ID = 19260]
2. ATP synthase [Option ID = 19259]
3. PSII [Option ID = 19258]
4. PSI [Option ID = 19257]

Correct Answer :-

- PSI [Option ID = 19257]

12) Which of the following vectors can accommodate the largest DNA insert?

[Question ID = 12351]

1. Lambda phage [Option ID = 19403]
2. Yeast artificial chromosome. [Option ID = 19404]
3. Plasmid [Option ID = 19401]
4. Cosmid [Option ID = 19402]

Correct Answer :-

- Plasmid [Option ID = 19401]

13) Which of the following molecular probes is used to stain the nucleus?

[Question ID = 12344]

1. DAPI [Option ID = 19375]
2. Rhodamine123 [Option ID = 19376]

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3. H2DCFDA [Option ID = 19373]
4. Fura-2 [Option ID = 19374]

Correct Answer :-

- H2DCFDA [Option ID = 19373]

14) Which region of the gene is under relatively high selective pressure during evolution?

[Question ID = 12335]

1. 5′ UTR [Option ID = 19337]
2. Intron [Option ID = 19340]
3. CDS [Option ID = 19339]
4. 3′ UTR [Option ID = 19338]

Correct Answer :-

- 5′ UTR [Option ID = 19337]

15) Which type of kinase is involved in two-component signaling system?

[Question ID = 12342]

1. Histidine kinase [Option ID = 19367]
2. Serine/threonine kinase [Option ID = 19365]
3. Arginine kinase [Option ID = 19368]
4. Tyrosine kinase [Option ID = 19366]

Correct Answer :-

- Serine/threonine kinase [Option ID = 19365]

16) Which one of the following is the botanical name of oil palm?

[Question ID = 12334]

1. *Olea europaea* [Option ID = 19334]
2. *Cocos nucifera* [Option ID = 19335]
3. *Elaeis guineensis* [Option ID = 19333]
4. Carthamus tintorius [Option ID = 19336]

Correct Answer :-

- *Elaeis guineensis* [Option ID = 19333]

17) Which polymer is deposited as an early response to pathogen attack in plants?

[Question ID = 12326]

1. Callose [Option ID = 19304]
2. Cellulose [Option ID = 19302]
3. Stachyose [Option ID = 19301]
4. Amylose [Option ID = 19303]

Correct Answer :-

- Stachyose [Option ID = 19301]

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18) Which country is the largest producer of pineapple?

[Question ID = 12321]

1. India [Option ID = 19284]
2. Egypt [Option ID = 19283]
3. Turkey [Option ID = 19282]
4. South Korea [Option ID = 19281]

Correct Answer :-

- South Korea [Option ID = 19281]

19) In nature, cleistogamous flowers are:

[Question ID = 12325]

1. Insect pollinated [Option ID = 19298]
2. Wind pollinated [Option ID = 19297]
3. Self pollinated [Option ID = 19299]
4. Bird pollinated. [Option ID = 19300]

Correct Answer :-

- Wind pollinated [Option ID = 19297]

20) SH2 (Src Homology 2) domain specifically binds to:

[Question ID = 12339]

1. Phosphorylated tyrosine residues [Option ID = 19354]
2. Phosphorylated serine residues [Option ID = 19353]
3. Ca^{2+}. [Option ID = 19356]
4. GDP [Option ID = 19355]

Correct Answer :-

- Phosphorylated serine residues [Option ID = 19353]

21) Glutathione, which consists of glycine, glutamate and cysteine, is synthesized:

[Question ID = 12318]

1. without a DNA template. [Option ID = 19272]
2. using a gene having 9 base coding sequence. [Option ID = 19269]
3. using a gene having 15 base coding sequence. [Option ID = 19271]
4. using a gene having 12 base coding sequence. [Option ID = 19270]

Correct Answer :-

- using a gene having 9 base coding sequence. [Option ID = 19269]

22) In an animal cell, programmed cell death (apoptosis) is morphologically defined as:

[Question ID = 12343]

1. Lysis of lysosomes and Golgi apparatus. [Option ID = 19372]
2. Disruption of plasma membrane [Option ID = 19371]
3. Blebbing of cell membrane and shrinking of nucleus [Option ID = 19370]

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4. Degradation of endomembranes [Option ID = 19369]

Correct Answer :-

- Degradation of endomembranes [Option ID = 19369]

23) In a type of apomixis known as adventive embryony, embryos develop directly from the

[Question ID = 12319]

1. accessory embryo sacs in the ovule. [Option ID = 19276]
2. nucellus or integuments. [Option ID = 19274]
3. zygote. [Option ID = 19273]
4. synergids or antipodals in an embryo sac. [Option ID = 19275]

Correct Answer :-

- zygote. [Option ID = 19273]

24) Development of zygote without fertilization is:

[Question ID = 12350]

1. Regeneration [Option ID = 19397]
2. Proliferation. [Option ID = 19400]
3. Embryogenesis [Option ID = 19398]
4. Parthenogenesis [Option ID = 19399]

Correct Answer :-

- Regeneration [Option ID = 19397]

25) With reference to the 'protein substitution alignment scoring matrices', the term 'PAM60' stands for:

[Question ID = 12333]

1. Permanent Accepted Mutation 60 [Option ID = 19329]
2. Promiscuously Accepted Mutation 60. [Option ID = 19332]
3. Preferred Accepted Mutation 60 [Option ID = 19330]
4. Point Accepted Mutation 60 [Option ID = 19331]

Correct Answer :-

- Permanent Accepted Mutation 60 [Option ID = 19329]

26) Norman Borlaug Institute for International Agriculture is in:

[Question ID = 12324]

1. Texas [Option ID = 19293]
2. Florida [Option ID = 19295]
3. California [Option ID = 19294]
4. Colorado. [Option ID = 19296]

Correct Answer :-

- Texas [Option ID = 19293]

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27) RNA is synthesized

[Question ID = 12309]

1. from 3' to 5'direction. [Option ID = 19234]
2. from 5' to 3' direction. [Option ID = 19233]
3. at 5' end in 5' to 3' direction and at 3' end in 3' to 5' direction. [Option ID = 19236]
4. in both directions. [Option ID = 19235]

Correct Answer :-

- from 5' to 3' direction. [Option ID = 19233]

28) Deficiency of which enzyme will affect availability of NADPH?

[Question ID = 12316]

1. α-keto glutarate dehydrogenase [Option ID = 19263]
2. Glucose 6-phosphate dehydrogenase [Option ID = 19261]
3. Citrate synthase [Option ID = 19262]
4. Succinate dehydrogenase [Option ID = 19264]

Correct Answer :-

- Glucose 6-phosphate dehydrogenase [Option ID = 19261]

29) Who is the first 'Lokpal' of India?

[Question ID = 12338]

1. Vinod Rai [Option ID = 19352]
2. Ranjan Gogoi [Option ID = 19350]
3. Deepak Mishra [Option ID = 19351]
4. Pinaki Chandra Ghose [Option ID = 19349]

Correct Answer :-

- Pinaki Chandra Ghose [Option ID = 19349]

30) In which country, 'Yellow river' was associated with the ancient agriculture?

[Question ID = 12322]

1. Australia [Option ID = 19288]
2. Iran [Option ID = 19285]
3. Egypt [Option ID = 19286]
4. China [Option ID = 19287]

Correct Answer :-

- Iran [Option ID = 19285]

31) Crossing of F1 heterozygous with the homozygous recessive parent is known as:

[Question ID = 12352]

1. Back cross. [Option ID = 19408]
2. Test cross [Option ID = 19405]
3. Reciprocal process [Option ID = 19407]

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Correct Answer :-

- Test cross [Option ID = 19405]

32) In the cAMP pathway, the G protein stimulates:

[Question ID = 12340]

1. Receptor tyrosine kinase. [Option ID = 19360]
2. Phospholipase D [Option ID = 19359]
3. Phospholipase C [Option ID = 19357]
4. Adenylyl cyclase [Option ID = 19358]

Correct Answer :-

- Phospholipase C [Option ID = 19357]

33) Klenow fragment of DNA polymerase I of *Escherichia coli* lacks the following enzymatic activity:

[Question ID = 12307]

1. 5'->3' polymerase [Option ID = 19225]
2. 5'->3' exonuclease [Option ID = 19226]
3. 3'->5' exonuclease. [Option ID = 19227]
4. All of these [Option ID = 19228]

Correct Answer :-

- 5'->3' polymerase [Option ID = 19225]

34) Transgenic resistance against viral infection in plants has been achieved by the over-expression of:

[Question ID = 12331]

1. Pathogenesis-related protein [Option ID = 19321]
2. Glucanase [Option ID = 19323]
3. Coat protein. [Option ID = 19324]
4. Reverse transcriptase inhibitors [Option ID = 19322]

Correct Answer :-

- Pathogenesis-related protein [Option ID = 19321]

35) In eukaryotes, genes start with

[Question ID = 12310]

1. either of exons or introns. [Option ID = 19239]
2. exons. [Option ID = 19237]
3. introns. [Option ID = 19238]
4. none of these. [Option ID = 19240]

Correct Answer :-

- exons. [Option ID = 19237]

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36) Gel filtration chromatography separates the molecules on the basis of their:

[Question ID = 12354]

1. Solubility [Option ID = 19415]
2. Charge to mass ratio. [Option ID = 19416]
3. Charge [Option ID = 19414]
4. Stokes radius [Option ID = 19413]

Correct Answer :-

- Stokes radius [Option ID = 19413]

37) Reduction of nitrite to ammonia in plants requires:

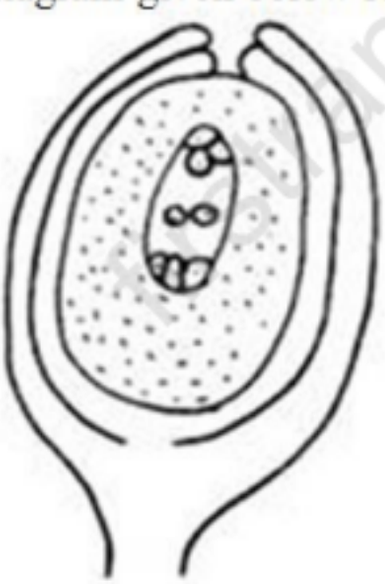
[Question ID = 12320]

1. Glutathione [Option ID = 19279]
2. NADH [Option ID = 19277]
3. Reduced ferredoxin. [Option ID = 19280]
4. NADPH [Option ID = 19278]

Correct Answer :-

- NADH [Option ID = 19277]

38) The diagram given below represents the sectional view of:



[Question ID = 12348]

1. Campylotropous ovule. [Option ID = 19392]
2. Orthotropous ovule [Option ID = 19390]
3. Atropous ovule [Option ID = 19391]
4. Amphitropous ovule [Option ID = 19389]

Correct Answer :-

- Amphitropous ovule [Option ID = 19389]

39) 'Gamma garden' is associated with:

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[Question ID = 12311]

1. Growing plantlet produced by tissue culture [Option ID = 19241]
2. Growing genetically engineered plants on trial basis [Option ID = 19243]
3. Eradicating pathogens from infected plants [Option ID = 19242]
4. Mutation breeding for crop improvement. [Option ID = 19244]

Correct Answer :-

- Growing plantlet produced by tissue culture [Option ID = 19241]

40) 'Norin 10' is a cultivar of:

[Question ID = 12323]

1. Maize [Option ID = 19290]
2. Rice [Option ID = 19289]
3. Wheat [Option ID = 19291]
4. Sorghum. [Option ID = 19292]

Correct Answer :-

- Rice [Option ID = 19289]

41) A phenomenon in which second mutation that nullifies the effect of first mutation in a gene resulting in restoration of the wild type phenotype is known as:

[Question ID = 12306]

1. synthetic enhancement. [Option ID = 19224]
2. Intragenic suppression [Option ID = 19222]
3. gene conversion [Option ID = 19223]
4. Intergenic complementation [Option ID = 19221]

Correct Answer :-

- Intergenic complementation [Option ID = 19221]

42) At steady state level, mRNAs of a gene in dark and light are equal, but in a run-on assay mRNA level is higher by two folds in light. Keeping this outcome in view, which of the following is correct?

[Question ID = 12313]

1. mRNA is destabilized in dark [Option ID = 19250]
2. mRNA is destabilized in light [Option ID = 19252]
3. mRNA is stabilized in light [Option ID = 19251]
4. mRNA is stabilized in dark [Option ID = 19249]

Correct Answer :-

- mRNA is stabilized in dark [Option ID = 19249]

43) Gene promoters in eukaryotes:

[Question ID = 12308]

1. always include TATA box [Option ID = 19229]
2. include TATA box only in presence of CAAT box [Option ID = 19232]

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3. include TATA box sometimes [Option ID = 19230]
4. do not include TATA box [Option ID = 19231]

Correct Answer :-

- always include TATA box [Option ID = 19229]

44) Fibrous thickenings of hygroscopic nature are found in which part of the anther wall?

[Question ID = 12349]

1. Tapetum [Option ID = 19396]
2. Epidermis [Option ID = 19395]
3. Middle layers [Option ID = 19393]
4. Endothecium [Option ID = 19394]

Correct Answer :-

- Middle layers [Option ID = 19393]

45) Peculiarity of RNA polymerase III function is that during transcription it can bind:

[Question ID = 12346]

1. Does not bind to promoters at all. [Option ID = 19384]
2. Promoter sequences located upstream of the coding sequences [Option ID = 19382]
3. Promoter sequences located in coding regions of genes [Option ID = 19381]
4. Promoters located in 3'UTR [Option ID = 19383]

Correct Answer :-

- Promoter sequences located in coding regions of genes [Option ID = 19381]

46) The resolution of an electron microscope is:

[Question ID = 12312]

1. 200 nm. [Option ID = 19248]
2. 0.10 nm [Option ID = 19245]
3. 0.10 fm [Option ID = 19247]
4. 0.10 pm [Option ID = 19246]

Correct Answer :-

- 0.10 nm [Option ID = 19245]

47) The 'Position Specific Scoring Matrix' or PSSM can be used to define:

[Question ID = 12337]

1. Protein function [Option ID = 19347]
2. Protein domain [Option ID = 19346]
3. Gene structure [Option ID = 19345]
4. Gene function. [Option ID = 19348]

Correct Answer :-

- Gene structure [Option ID = 19345]

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48) The receptor for ABA is known as

[Question ID = 12341]

1. ABR [Option ID = 19363]
2. ABP [Option ID = 19362]
3. TIR. [Option ID = 19364]
4. PYR/PYL/RCAR [Option ID = 19361]

Correct Answer :-

- PYR/PYL/RCAR [Option ID = 19361]

49) The 'gene-for-gene' concept related to the plant-pathogen interaction was proposed by H.H. Flor while working with

[Question ID = 12329]

1. potato. [Option ID = 19313]
2. wheat. [Option ID = 19316]
3. maize. [Option ID = 19314]
4. flax. [Option ID = 19315]

Correct Answer :-

- potato. [Option ID = 19313]

50) You are required to identify the differentially expressed genes in a transgenic versus non-transformed rice plant. Which of the following techniques would you employ?

[Question ID = 12305]

1. RAPD. [Option ID = 19220]
2. Transcriptome analysis [Option ID = 19219]
3. Genome sequencing [Option ID = 19217]
4. ChIP assay [Option ID = 19218]

Correct Answer :-

- Genome sequencing [Option ID = 19217]

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