DU MSc Plant Molecular Biology N Biotech

Topic:- PMBB MSC S2

1) A bacterium, which loses its ability to synthesize one or more organic compounds, is called
[Question ID = 3089]
1. Heterotroph [Option ID = 12350]
2. Prototroph [Option ID = 12351]
3. Auxotroph [Option ID = 12352]
4. Autotroph [Option ID = 12353]

Correct Answer :-
- Auxotroph [Option ID = 12352]

2) Bacterial recombination, mediated by bacteriophages, is called
[Question ID = 3090]
1. Conjugation [Option ID = 12354]
2. Transformation [Option ID = 12355]
3. Transduction [Option ID = 12356]
4. Segregation [Option ID = 12357]

Correct Answer :-
- Transduction [Option ID = 12356]

3) Complementation analysis using bacteriophages was performed by
[Question ID = 3091]
1. Joshua Lederberg [Option ID = 12358]
2. Seymour Benzer [Option ID = 12359]
3. Jacques Monod [Option ID = 12360]
4. Alfred Hershey [Option ID = 12361]

Correct Answer :-
- Seymour Benzer [Option ID = 12359]

4) During translation initiation, bacterial ribosomal subunits bind to mRNA at the
[Question ID = 3092]
1. AUG codon [Option ID = 12362]
2. First intron [Option ID = 12363]
3. TATA box [Option ID = 12364]
4. Shine-Delgarno sequence [Option ID = 12365]

Correct Answer :-
- Shine-Delgarno sequence [Option ID = 12365]

5) The *lac* operon can be induced by

[Question ID = 3093]
1. X-gal

   [Option ID = 12366]
2. NADP

   [Option ID = 12367]
3. ATP

   [Option ID = 12368]
4. IPTG

   [Option ID = 12369]

Correct Answer :-
- IPTG

  [Option ID = 12369]

6) Trp repressor controls an operon which encodes genes responsible for
[Question ID = 3094]
1. Conversion of tryptophan to phenylalanine [Option ID = 12370]
2. Conversion of phenylalanine to tryptophan [Option ID = 12371]
3. Degradation of tryptophan [Option ID = 12372]
4. Biosynthesis of tryptophan [Option ID = 12373]

Correct Answer :-

- Biosynthesis of tryptophan [Option ID = 12373]

7) The modified base wyosine is found in
[Question ID = 3095]

1. tRNA [Option ID = 12374]
2. siRNA [Option ID = 12375]
3. rRNA [Option ID = 12376]
4. mRNA [Option ID = 12377]

Correct Answer :-

- tRNA [Option ID = 12374]

8) Rust disease of wheat is caused by a
[Question ID = 3096]

1. Virus [Option ID = 12378]
2. Bacterium [Option ID = 12379]
3. Nematode [Option ID = 12380]
4. Fungus [Option ID = 12381]

Correct Answer :-

- Fungus [Option ID = 12381]

9) Upon pathogen attack, some plants exhibit a reaction known as Hypersensitive Response (HR), which involves
[Question ID = 3097]

1. Rapid multiplication of infected cells [Option ID = 12382]
2. Dedifferentiation of the affected tissue [Option ID = 12383]
3. Increased vasculature in the infected region [Option ID = 12384]
4. Rapid localized cell death [Option ID = 12385]

Correct Answer :-

- Rapid localized cell death [Option ID = 12385]

10) Which hormone is responsible for the “Witch’s broom” disease?
[Question ID = 3098]

1. Cytokinin [Option ID = 12386]
2. ABA [Option ID = 12387]
3. Gibberellin [Option ID = 12388]
4. Ethylene [Option ID = 12389]

Correct Answer :-

- Cytokinin [Option ID = 12386]

11) Precursor for ethylene biosynthesis is
[Question ID = 3099]

1. Tryptophan [Option ID = 12390]
2. Methionine [Option ID = 12391]
3. Arginine [Option ID = 12392]
4. Ornithine [Option ID = 12393]

Correct Answer :-

- Methionine [Option ID = 12391]

12) Which feature of the following is characteristic of a monocot embryo?
[Question ID = 3100]

1. Asymmetric division of the embryo [Option ID = 12394]
2. Octant stage [Option ID = 12395]
3. Establishment of bilateral asymmetry [Option ID = 12396]
4. Lateral differentiation of the SAM [Option ID = 12397]

Correct Answer :-

- Lateral differentiation of the SAM [Option ID = 12397]

13) Seeds of which of the following plants are non-endospermic?
[Question ID = 3101]

1. Custard apple [Option ID = 12398]
2. Orchid [Option ID = 12399]
3. Wheat [Option ID = 12400]
4. Mango [Option ID = 12401]

Correct Answer :-

- Orchid [Option ID = 12399]

14) Amygdalin, a well-known cyanogenic glycoside, is isolated from
[Question ID = 3102]

1. Linseed [Option ID = 12402]
2. Bean [Option ID = 12403]
3. Cassava [Option ID = 12404]
4. Bitter almond [Option ID = 12405]

Correct Answer :-

- Bitter almond [Option ID = 12405]

15) Which of the following photoreceptors in plants exists in two photo-interconvertible forms?
[Question ID = 3103]

1. Cryptochrome [Option ID = 12406]
2. Phytochrome [Option ID = 12407]
3. Phototropin [Option ID = 12408]
4. ß-carotene [Option ID = 12409]

Correct Answer :-

- Phytochrome [Option ID = 12407]

16) Which of the following enzymes plays a role in light-induced stomatal opening?
[Question ID = 3104]

1. K^+-ATPase [Option ID = 12410]
2. Na^+-ATPase [Option ID = 12411]
3. Ca^{2+}-ATPase [Option ID = 12412]
4. H^+-ATPase [Option ID = 12413]

Correct Answer :-

- H^+-ATPase [Option ID = 12413]

17) Exposure of DNA to ultraviolet light commonly leads to
[Question ID = 3105]

1. Formation of thymine dimers [Option ID = 12414]
2. Formation of adenine dimers [Option ID = 12415]
3. Adenine to thymine conversion [Option ID = 12416]
4. Thymine to adenine conversion [Option ID = 12417]

Correct Answer :-

- Formation of thymine dimers [Option ID = 12414]

18) Movements in a compound leaf of leguminous plants occur due to ionic changes in
[Question ID = 3106]

1. Petiole [Option ID = 12418]
2. Pinnules [Option ID = 12419]
3. Pulvinus [Option ID = 12420]
4. Bundle sheath cells [Option ID = 12421]

Correct Answer :-

- Pulvinus [Option ID = 12420]

19) Which of the following hormones is involved in vivipary?
[Question ID = 3107]

1. Abscisic acid [Option ID = 12422]
2. Jasmonic acid [Option ID = 12423]
3. Cytokinin [Option ID = 12424]
4. Ethylene [Option ID = 12425]

Correct Answer :-

- Abscisic acid [Option ID = 12422]

20) In a germinating seed of barley, gibberellin is synthesized in the
[Question ID = 3108]

1. Endosperm [Option ID = 12426]
2. Embryonic axis [Option ID = 12427]
3. Seed coat [Option ID = 12428]
4. Aleurone layer [Option ID = 12429]

Correct Answer :-

- Embryonic axis [Option ID = 12427]

21) The 'Acid-Growth Hypothesis' for auxin action was proposed by
[Question ID = 3109]

1. F.W. Went and K.V. Thimann [Option ID = 12430]
2. D. Rayle and R. Cleland [Option ID = 12431]
3. C. Hamner and J.D. Bonner [Option ID = 12432]
4. S.B. Hendricks and H. Borthwick [Option ID = 12433]

Correct Answer :-

- D. Rayle and R. Cleland [Option ID = 12431]

22) The most common precursor of the plant hormone, IAA, is
[Question ID = 3110]

1. Methionine [Option ID = 12434]
2. Phenyalanine [Option ID = 12435]
3. Tyrosine [Option ID = 12436]
4. Tryptophan [Option ID = 12437]

Correct Answer :-

- Tryptophan [Option ID = 12437]

23) During embryo development in plants, PIN proteins are primarily involved in
[Question ID = 3111]

1. Regulating cell division [Option ID = 12438]
2. Regulating cell elongation [Option ID = 12439]
3. Regulation of gene expression [Option ID = 12440]
4. Establishment of auxin gradient [Option ID = 12441]

Correct Answer :-

- Establishment of auxin gradient [Option ID = 12441]

24) Which of the following processes is NOT carried out mainly by mitochondria?
[Question ID = 3112]

1. Biosynthesis of cardiolipin [Option ID = 12442]
2. Biosynthesis of fatty acids [Option ID = 12443]
3. Catabolism of amino acids [Option ID = 12444]
4. Generation of reactive oxygen species [Option ID = 12445]

Correct Answer :-

- Biosynthesis of fatty acids [Option ID = 12443]

25) Which of the following molecules CANNOT serve as a terminal electron acceptor in bacterial electron-transport chain?
[Question ID = 3113]

1. Oxygen [Option ID = 12446]
2. Sulfate [Option ID = 12447]
3. Fumarate [Option ID = 12448]
4. Magnesium [Option ID = 12449]

Correct Answer :-

- Magnesium [Option ID = 12449]

26) Which of the following is NOT universally encoded by the mitochondrial DNA?
[Question ID = 3114]

1. Small ribosomal RNA [Option ID = 12450]
2. Large ribosomal RNA [Option ID = 12451]
3. A cytochrome oxidase subunit [Option ID = 12452]
4. Transfer RNA [Option ID = 12453]

Correct Answer :-

- Transfer RNA [Option ID = 12453]

27) Which of the following cytoskeletal filaments are abundant in an animal cell nucleus?
[Question ID = 3115]

1. Microfilaments [Option ID = 12454]
2. Microtubules [Option ID = 12455]
3. Lamins [Option ID = 12456]
4. Spectrin filaments [Option ID = 12457]

Correct Answer :-

- Lamins [Option ID = 12456]

28) Consider the structure of a sarcomere. Which of its features DOES NOT shorten during skeletal muscle contraction?
[Question ID = 3116]

1. The dark band [Option ID = 12458]
2. The light band [Option ID = 12459]
3. The distance from the M-line to the Z-disc [Option ID = 12460]
4. The distance between two consecutive Z-discs [Option ID = 12461]

Correct Answer :-

- The dark band [Option ID = 12458]

29) Which is the most common polymer present in the plant secondary cell wall but not the primary cell wall?

[Question ID = 3117]

1. Cellulose [Option ID = 12462]
2. Pectin [Option ID = 12463]
3. Lignin [Option ID = 12464]
4. Starch [Option ID = 12465]

Correct Answer :-

- Lignin [Option ID = 12464]

30) Which of the following statement is true for increasing the resolution of electron microscope?

[Question ID = 3118]

1. Electromagnetic lenses determine the resolution [Option ID = 12466]
2. Wavelength of electron beam determines the resolution [Option ID = 12467]
3. Thickness of specimen determines the resolution [Option ID = 12468]
4. Electron dense region in the specimen determines the resolution [Option ID = 12469]

Correct Answer :-

- Wavelength of electron beam determines the resolution [Option ID = 12467]

31) In a diploid organism, Law of Segregation results in

[Question ID = 3119]

1. Separation of alleles [Option ID = 12470]
2. Separation of genes on one chromosome [Option ID = 12471]
3. Segregation of individuals [Option ID = 12472]
4. Segregation of male and female gametes [Option ID = 12473]

Correct Answer :-

- Separation of alleles [Option ID = 12470]

32) Plant protoplasts are

[Question ID = 3120]

1. Precursors of amyloplasts [Option ID = 12474]
2. Plant cells without cell walls [Option ID = 12475]
3. Primitive cells [Option ID = 12476]
4. Cytoplasm without plasma membrane [Option ID = 12477]

Correct Answer :-

- Plant cells without cell walls [Option ID = 12475]

33) Which of the following scientists discovered mobile genetic elements?

[Question ID = 3121]

1. S. Tonegawa [Option ID = 12478]
2. S. Brenner [Option ID = 12479]
3. B. McClintock [Option ID = 12480]
4. L.B. Buck [Option ID = 12481]

Correct Answer :-

- B. McClintock [Option ID = 12480]

34) Transferred DNA from Ti-plasmid is maintained in a transgenic plant as

[Question ID = 3122]

1. An independent linear replicon [Option ID = 12482]
2. An independent circular replicon [Option ID = 12483]
3. Integrated DNA in chromosome [Option ID = 12484]
4. Multiple independent copies of introduced DNA [Option ID = 12485]

Correct Answer :-

- Integrated DNA in chromosome [Option ID = 12484]

35) Metabolomics is primarily the study of the

[Question ID = 3123]

1. Entire suite of metabolites [Option ID = 12486]
2. Metabolism [Option ID = 12487]
3. Proteins involved in metabolism [Option ID = 12488]
4. Enzymes [Option ID = 12489]

Correct Answer :-

- Entire suite of metabolites [Option ID = 12486]

36) Dideoxynucleotide lacks

[Question ID = 3124]

1. 3'OH [Option ID = 12490]
2. 2'OH [Option ID = 12491]
3. Phosphate group [Option ID = 12492]
4. 3'OH and 2'OH [Option ID = 12493]

Correct Answer :-

- 3'OH and 2'OH [Option ID = 12493]

37) Which of the following is a selectable marker gene?

[Question ID = 3125]

1. *Gfp*

   [Option ID = 12494]
2. *Luciferase*

   [Option ID = 12495]
3. *gus*

   [Option ID = 12496]
4. *nptII*

   [Option ID = 12497]

Correct Answer :-

- *nptII*

  [Option ID = 12497]

38) A plant cell contains circular DNA in

[Question ID = 3126]

1. One organelle [Option ID = 12498]
2. Two organelles [Option ID = 12499]
3. Three organelles [Option ID = 12500]
4. Four organelles [Option ID = 12501]

Correct Answer :-

- Two organelles [Option ID = 12499]

39) cDNA is synthesized by

[Question ID = 3127]

1. RNA polymerase I [Option ID = 12502]
2. RNA polymerase II [Option ID = 12503]
3. RNA polymerase III [Option ID = 12504]
4. Reverse transcriptase [Option ID = 12505]

Correct Answer :-

- Reverse transcriptase [Option ID = 12505]

40) Northern hybridization is related to

[Question ID = 3128]

1. Detection of DNA [Option ID = 12506]
2. Detection of RNA [Option ID = 12507]
3. Detection of protein [Option ID = 12508]
4. Detection of DNA and RNA [Option ID = 12509]

Correct Answer :-

- Detection of RNA [Option ID = 12507]

41) Introns are present at the level of

[Question ID = 3129]

1. Genomic DNA [Option ID = 12510]
2. cDNA [Option ID = 12511]
3. mRNA [Option ID = 12512]
4. Protein [Option ID = 12513]

Correct Answer :-

- Genomic DNA [Option ID = 12510]

42) Which of the following scientists was given Nobel Prize for discovery of restriction enzymes?

[Question ID = 3130]

1. P. Berg [Option ID = 12514]
2. A. Klug [Option ID = 12515]
3. W. Arber [Option ID = 12516]
4. F. Sanger [Option ID = 12517]

Correct Answer :-

- W. Arber [Option ID = 12516]

43) Which of the following plants is useful for cancer therapy?

[Question ID = 3131]

1. *Datura stramonium*

   [Option ID = 12518]
2. *Dioscorea deltoidea*

   [Option ID = 12519]
3. *Taxus brevifolia*

   [Option ID = 12520]
4. *Atropa belladonna*

   [Option ID = 12521]

Correct Answer :-

- *Taxus brevifolia*

  [Option ID = 12520]

44) Which of the following plants is a commercial source of an artificial sweetener?

[Question ID = 3132]

1. *Stevia rebaudiana*

   [Option ID = 12522]
2. *Atropa belladonna*

   [Option ID = 12523]
3. *Papaver somnifera*

   [Option ID = 12524]
4. *Cinchona officinalis*

   [Option ID = 12525]

Correct Answer :-

- *Stevia rebaudiana*

  [Option ID = 12522]

45) Which of the following biological systems is a predominant source of the 'Luciferase' enzyme?

[Question ID = 3133]

1. *Photinus pyralis*

   [Option ID = 12526]
2. *Drosophila melanogaster*

   [Option ID = 12527]
3. *Escherichia coli*

   [Option ID = 12528]
4. *Saccharomyces cerevisiae*

   [Option ID = 12529]

Correct Answer :-

- *Photinus pyralis*

  [Option ID = 12526]

46) Which of the following biological species is the predominant source of 'Taq polymerase enzyme'?

[Question ID = 3134]

1. *Thermus aquaticus*

   [Option ID = 12530]
2. *Thermus antranikianii*

   [Option ID = 12531]
3. *Thermus igniterrae*

   [Option ID = 12532]
4. *Thermus tengchongensis*

   [Option ID = 12533]

Correct Answer :-

- *Thermus aquaticus*

  [Option ID = 12530]

47) Who is credited for propounding the PCR technique?

[Question ID = 3135]

1. K. Mullis [Option ID = 12534]
2. A. Kornberg [Option ID = 12535]
3. M.W. Nirenberg [Option ID = 12536]
4. H.G. Khorana [Option ID = 12537]

Correct Answer :-

- K. Mullis [Option ID = 12534]

48) Which of the following scientists is credited for the “Green Revolution”?

[Question ID = 3136]

1. N. Borlaug [Option ID = 12538]
2. G. Haberlandt [Option ID = 12539]
3. G. Mendel [Option ID = 12540]
4. C. Darwin [Option ID = 12541]

Correct Answer :-

- N. Borlaug [Option ID = 12538]

49) IR-8 is a popular variety of

[Question ID = 3137]

1. Wheat [Option ID = 12542]
2. Rice [Option ID = 12543]
3. Maize [Option ID = 12544]
4. Cotton [Option ID = 12545]

Correct Answer :-

- Rice [Option ID = 12543]

50) The golden colour of ‘Golden rice’ is due to excess levels of

[Question ID = 3138]

1. Xanthophyll [Option ID = 12546]
2. Carotene [Option ID = 12547]
3. Phycoerythrin [Option ID = 12548]
4. Bilirubin [Option ID = 12549]

Correct Answer :-

- Carotene [Option ID = 12547]

51) RFLP analysis is a technique that

[Question ID = 3139]

1. Uses hybridization to detect specific DNA restriction fragments in genomics DNA [Option ID = 12550]
2. Measures the transfer frequency of genes during conjugation [Option ID = 12551]
3. Is used to detect genetic variation at the protein level [Option ID = 12552]
4. Is used to amplify genes for producing useful products [Option ID = 12553]

Correct Answer :-

- Uses hybridization to detect specific DNA restriction fragments in genomics DNA [Option ID = 12550]

52) Plasmid cloning vectors

[Question ID = 3140]

1. Can generally accommodate larger inserts than phage vectors [Option ID = 12554]
2. Can replicate within bacteria [Option ID = 12555]
3. Can accommodate inserts of over 100 kilobases [Option ID = 12556]
4. Include centromeres to allow propagation in yeast. [Option ID = 12557]

Correct Answer :-

- Can replicate within bacteria [Option ID = 12555]

53) On an average, how many fragments would a restriction enzyme which recognizes a specific 4 base sequence in DNA be expected to cleave a double-stranded bacteriophage with a genome size of 5,000 bp into ?

[Question ID = 3141]

1. About 2 [Option ID = 12558]
2. About 4 [Option ID = 12559]
3. About 20 [Option ID = 12560]
4. About 50 [Option ID = 12561]

Correct Answer :-

- About 20 [Option ID = 12560]

54) QTL analysis is used to

[Question ID = 3142]

1. Identify RNA polymerase binding sites [Option ID = 12562]
2. Determine which genes are expressed at a developmental stage [Option ID = 12563]
3. Identify chromosome regions associated with a quantitative trait [Option ID = 12564]

4. Determine the most rapidly-evolving parts of genes [Option ID = 12565]

Correct Answer :-

- Identify chromosome regions associated with a quantitative trait [Option ID = 12564]

55) Double fertilization involves

[Question ID = 3143]

1. Fertilization of the egg by two male gametes [Option ID = 12566]
2. Fertilization of two eggs in the same embryo sac by two sperms brought by one pollen tube [Option ID = 12567]
3. Fertilization of the egg and the central cell by two sperms brought by different pollen tubes [Option ID = 12568]
4. Fertilization of the egg and the central cell by two sperms brought by the same pollen tube [Option ID = 12569]

Correct Answer :-

- Fertilization of the egg and the central cell by two sperms brought by the same pollen tube [Option ID = 12569]

56) At which stage of development the male gametophyte is surrounded by a callose wall?

[Question ID = 3144]

1. Mature 3-celled stage [Option ID = 12570]
2. Bi-celled stage [Option ID = 12571]
3. Single cell stage [Option ID = 12572]
4. Pollen Mother Cell stage [Option ID = 12573]

Correct Answer :-

- Pollen Mother Cell stage [Option ID = 12573]

57) Which one of the following enzymes is substrate inducible?

[Question ID = 3145]

1. Triose phosphate isomerase [Option ID = 12574]
2. Glyceraldehyde phosphate dehydrogenase [Option ID = 12575]
3. Nitrate reductase [Option ID = 12576]
4. Hexose isomerase. [Option ID = 12577]

Correct Answer :-

- Nitrate reductase [Option ID = 12576]

58) The Lemma and Palea in cereal flowers are

[Question ID = 3146]

1. Modified sepals [Option ID = 12578]
2. Fused sepals and petals [Option ID = 12579]
3. Modified glumes [Option ID = 12580]
4. Nectaries [Option ID = 12581]

Correct Answer :-

- Modified glumes [Option ID = 12580]

59) Oxytocin is a

[Question ID = 3147]

1. Peptidal hormone [Option ID = 12582]
2. Steroidal hormone [Option ID = 12583]
3. Transcriptional factor [Option ID = 12584]
4. Hormonal receptor [Option ID = 12585]

Correct Answer :-

- Peptidal hormone [Option ID = 12582]

60) Which of the following is a zinc containing protein?

[Question ID = 3148]

1. Nitrogenase [Option ID = 12586]
2. Calmodulin [Option ID = 12587]
3. Nitrate reductase [Option ID = 12588]
4. Alcohol dehydrogenase [Option ID = 12589]

Correct Answer :-

- Alcohol dehydrogenase [Option ID = 12589]

61) Which of the following is a metalloprotein?

[Question ID = 3149]

1. Nitrogenase [Option ID = 12590]
2. Hexokinase [Option ID = 12591]
3. Triose phosphate isomerase [Option ID = 12592]
4. Desmosine [Option ID = 12593]

Correct Answer :-

- Nitrogenase [Option ID = 12590]

62) In sodium dodecyl sulphate structure which groups are found in multiples?
[Question ID = 3150]
1. Sodium [Option ID = 12594]
2. Sulphate [Option ID = 12595]
3. CH_2 [Option ID = 12596]
4. CH_3 [Option ID = 12597]

Correct Answer :-
- CH_2 [Option ID = 12596]

63) If photosynthesis is carried out in presence of CO_2 carrying labelled oxygen,which molecules produced would not carry radiolabel?

[Question ID = 3151]
1. 3-phospho glyceraldehyde

   [Option ID = 12598]
2. Ribulose 5 phosphate

   [Option ID = 12599]
3. Sedoheptulose

   [Option ID = 12600]
4. Oxygen

   [Option ID = 12601]

Correct Answer :-
- Oxygen

  [Option ID = 12601]

64) Which enzyme is involved in dissipation of energy in NADH as heat in plant mitochondria?
[Question ID = 3152]
1. Glycolate oxidase [Option ID = 12602]
2. Alternative oxidase [Option ID = 12603]
3. Succinate dehydrogenase [Option ID = 12604]
4. Cytochrome oxidase [Option ID = 12605]

Correct Answer :-
- Alternative oxidase [Option ID = 12603]

65) When intact mitochondria are disrupted by treatment with detergent, the resulting membrane fragments can still catalyze electron transfer from succinate or NADH to O_2, without ATP production. What is the reason for this?
[Question ID = 3153]
1. Inhibition of ATP synthase [Option ID = 12606]
2. Lack of ADP [Option ID = 12607]
3. Lack of proton gradient [Option ID = 12608]
4. Inhibition of cytochrome oxidase by the detergent [Option ID = 12609]

Correct Answer :-
- Lack of proton gradient [Option ID = 12608]

66) Chemical uncoupler 2,4-dinitrophenol (DNP) uncouples electron transport to ATP synthesis by

[Question ID = 3154]
1. Creating holes in mitochondrial membrane

   [Option ID = 12610]
2. Inhibiting ATP synthase

   [Option ID = 12611]
3. Inhibiting electron transport

   [Option ID = 12612]
4. Disrupting proton gradient

   [Option ID = 12613]

Correct Answer :-
- Disrupting proton gradient

  [Option ID = 12613]

67) Thylakoid membranes of chloroplasts mainly contain
[Question ID = 3155]

1. Phospholipids [Option ID = 12614]
2. Galactolipids [Option ID = 12615]
3. Sphingolipids [Option ID = 12616]

4. Triacylglycerol [Option ID = 12617]

Correct Answer :-

- Galactolipids [Option ID = 12615]

68) On equal mass basis, complete oxidation of which of the following to CO_2 and H_2O would produce more energy?
[Question ID = 3156]

1. Diacylglycerol [Option ID = 12618]
2. Phosphatidic acid [Option ID = 12619]
3. Triacylglycerol [Option ID = 12620]
4. Starch [Option ID = 12621]

Correct Answer :-

- Triacylglycerol [Option ID = 12620]

69) The enzyme acetyl-CoA carboxylase contains which of the following cofactors?
[Question ID = 3157]

1. Thymine pyrophosphate [Option ID = 12622]
2. Molybdenum [Option ID = 12623]
3. Biotin [Option ID = 12624]
4. Zinc [Option ID = 12625]

Correct Answer :-

- Biotin [Option ID = 12624]

70) Which two cell organelles contain maximum amount of cellular lipid?
[Question ID = 3158]

1. Mitochondria and chloroplasts [Option ID = 12626]
2. Mitochondria and ER [Option ID = 12627]
3. Vacuoles and chloroplasts [Option ID = 12628]
4. Chloroplasts and ER [Option ID = 12629]

Correct Answer :-

- Chloroplasts and ER [Option ID = 12629]

71) Synthesis of glutamine, using glutamate and NH_4^+, catalysed by glutamine synthetase is an example of
[Question ID = 3159]

1. Transamination [Option ID = 12630]
2. Oxidative amination [Option ID = 12631]
3. Reductive amination [Option ID = 12632]
4. Denitrification [Option ID = 12633]

Correct Answer :-

- Reductive amination [Option ID = 12632]

72) Which enzyme is the target of common herbicide Basta?
[Question ID = 3160]

1. EPSP synthase [Option ID = 12634]
2. Glutamate dehydrogenase [Option ID = 12635]
3. Glutamine synthetase [Option ID = 12636]
4. Acetohydroxy acid synthase [Option ID = 12637]

Correct Answer :-

- Glutamine synthetase [Option ID = 12636]

73) Which of the following gene(s) involved in symbiotic nitrogen fixation in leguminous plants is of plant origin?

[Question ID = 3161]

1. *nod D*

   [Option ID = 12638]
2. *nol*

   [Option ID = 12639]
3. *fixL*

   [Option ID = 12640]
4. *ENOD*

   [Option ID = 12641]

Correct Answer :-

- *ENOD*

  [Option ID = 12641]

74) In a plant transformation experiment, inclusion of antibiotic resistance gene expression cassette within T-DNA of binary

vector is important for

[Question ID = 3162]

1. An efficient infectivity of *Agrobacterium*

   [Option ID = 12642]
2. An efficient transfer of T-DNA into plant genome

   [Option ID = 12643]
3. Selection of putative transformants

   [Option ID = 12644]
4. Protection of transformants from bacterial infection

   [Option ID = 12645]

Correct Answer :-

- Selection of putative transformants

  [Option ID = 12644]

75) Starch is a polymer of glucose with linkages of

[Question ID = 3163]

1. α (1-6), β (1-4) [Option ID = 12646]
2. α (1-4), β (1-6) [Option ID = 12647]
3. α (1-4), α (1-6) [Option ID = 12648]
4. β (1-4), β (1-6) [Option ID = 12649]

Correct Answer :-

- α (1-4), α (1-6) [Option ID = 12648]

76) A gene that has originated through duplication within a species and has acquired new function is known as

[Question ID = 3164]

1. Paralogous [Option ID = 12650]
2. Orthologous [Option ID = 12651]
3. Heterologous [Option ID = 12652]
4. Neologous [Option ID = 12653]

Correct Answer :-

- Paralogous [Option ID = 12650]

77) A yeast artificial chromosome (YAC) contains all the following except

[Question ID = 3165]

1. ARS [Option ID = 12654]
2. Telomeres [Option ID = 12655]
3. Centromere [Option ID = 12656]
4. Satellite DNA [Option ID = 12657]

Correct Answer :-

- Satellite DNA [Option ID = 12657]

78) Isoelectric point of a protein is the pH at which its overall charge is

[Question ID = 3166]

1. 0 [Option ID = 12658]
2. 2 [Option ID = 12659]
3. -2 [Option ID = 12660]
4. 1 [Option ID = 12661]

Correct Answer :-

- 0 [Option ID = 12658]

79) Deamination of adenine results in the formation of

[Question ID = 3167]

1. Hypoxanthine [Option ID = 12662]
2. Uracil [Option ID = 12663]
3. Cytosine [Option ID = 12664]
4. Guanine [Option ID = 12665]

Correct Answer :-

- Hypoxanthine [Option ID = 12662]

80) Which of the following is a text-based database search tool?

[Question ID = 3168]

1. BLAST [Option ID = 12666]
2. ENTREZ [Option ID = 12667]
3. CLUSTAL [Option ID = 12668]
4. RASMOL [Option ID = 12669]

Correct Answer :-

- ENTREZ [Option ID = 12667]

81) The 'PDB' file format can be used to store
[Question ID = 3169]

1. DNA sequence only [Option ID = 12670]
2. Protein sequence only [Option ID = 12671]
3. Both DNA and protein sequences [Option ID = 12672]
4. Protein structure data [Option ID = 12673]

Correct Answer :-

- Protein structure data [Option ID = 12673]

82) Which of the following has the smallest genome?
[Question ID = 3170]

1. Humans [Option ID = 12674]
2. Wheat [Option ID = 12675]
3. Arabidopsis [Option ID = 12676]
4. Tomato [Option ID = 12677]

Correct Answer :-

- Arabidopsis [Option ID = 12676]

83) Which of the following is a database dedicated to only a particular organism?
[Question ID = 3171]

1. GenBank [Option ID = 12678]
2. Uniprot [Option ID = 12679]
3. WormBase [Option ID = 12680]
4. CATH [Option ID = 12681]

Correct Answer :-

- WormBase [Option ID = 12680]

84) Who is the first 'Chief of Defence Staff' of India?
[Question ID = 3172]

1. Gen. Bipin Rawat [Option ID = 12682]
2. Gen. Manoj Mukund Naravane [Option ID = 12683]
3. Gen. Dalbir Singh Suhag [Option ID = 12684]
4. Gen. Bikram Singh [Option ID = 12685]

Correct Answer :-

- Gen. Bipin Rawat [Option ID = 12682]

85) The Ultraviolet radiations in the stratosphere are absorbed by
[Question ID = 3173]

1. SO_2 [Option ID = 12686]
2. Oxygen [Option ID = 12687]
3. Ozone [Option ID = 12688]
4. Argon [Option ID = 12689]

Correct Answer :-

- Ozone [Option ID = 12688]

86) Which Indian women hockey player is the recipient of 'Padma Shri' award (2020)?
[Question ID = 3174]

1. Rani Rampal [Option ID = 12690]
2. Navneet Kaur [Option ID = 12691]
3. Harmanpreet Kaur [Option ID = 12692]
4. Smriti Mandhana [Option ID = 12693]

Correct Answer :-

- Rani Rampal [Option ID = 12690]

87) Which of the following countries had established a world record in the year 2018 by launching the maximum number of satellites (104) in a single attempt?
[Question ID = 3175]

1. USA [Option ID = 12694]
2. Russia [Option ID = 12695]
3. India [Option ID = 12696]
4. China [Option ID = 12697]

Correct Answer :-

- India [Option ID = 12696]

88) The target protein of the 'Glyphosate' herbicide is
[Question ID = 3176]
1. EPSP synthase [Option ID = 12698]
2. Glutamine synthetase [Option ID = 12699]
3. Acetolactate synthetase [Option ID = 12700]
4. D1 protein [Option ID = 12701]

Correct Answer :-
- EPSP synthase [Option ID = 12698]

89) 'Cry proteins' are useful in conferring resistance to plants against
[Question ID = 3177]
1. Viruses [Option ID = 12702]
2. Nematodes [Option ID = 12703]
3. Insects [Option ID = 12704]
4. Bacteria [Option ID = 12705]

Correct Answer :-
- Insects [Option ID = 12704]

90) Nucleosome is made of
[Question ID = 3178]
1. Histones only [Option ID = 12706]
2. Histones and DNA [Option ID = 12707]
3. DNA only [Option ID = 12708]
4. Histones and RNA [Option ID = 12709]

Correct Answer :-
- Histones and DNA [Option ID = 12707]

91) The 'gene-for-gene concept' related to the genetics of plant-pathogen interaction, formulated by H. Flor, was developed using
[Question ID = 3179]
1. Potato [Option ID = 12710]
2. Maize [Option ID = 12711]
3. Flax [Option ID = 12712]
4. Wheat [Option ID = 12713]

Correct Answer :-
- Flax [Option ID = 12712]

92) Which of the following is a non-protein amino acid?
[Question ID = 3180]
1. Lysine [Option ID = 12714]
2. Morphine [Option ID = 12715]
3. Putrescine [Option ID = 12716]
4. Canavanine [Option ID = 12717]

Correct Answer :-
- Canavanine [Option ID = 12717]

93) The polyembryony commonly occurs in
[Question ID = 3181]
1. Tomato [Option ID = 12718]
2. Potato [Option ID = 12719]
3. Orange [Option ID = 12720]
4. Turmeric [Option ID = 12721]

Correct Answer :-
- Orange [Option ID = 12720]

94) The nonvascular plants whose gametophytes are larger than their sporophytes are
[Question ID = 3182]
1. Algae [Option ID = 12722]
2. Fungi [Option ID = 12723]
3. Bryophytes [Option ID = 12724]
4. Pteridophytes [Option ID = 12725]

Correct Answer :-
- Bryophytes [Option ID = 12724]

95) Coconut water and the edible part of the coconut are equivalent to
[Question ID = 3183]
1. Embryo [Option ID = 12726]
2. Mesocarp [Option ID = 12727]

3. Endocarp [Option ID = 12728]
4. Endosperm [Option ID = 12729]

Correct Answer :-

- Endosperm [Option ID = 12729]

96) Sunflower belongs to the following family:
[Question ID = 3184]

1. Cruciferae [Option ID = 12730]
2. Asteraceae [Option ID = 12731]
3. Liliaceae [Option ID = 12732]
4. Fabaceae [Option ID = 12733]

Correct Answer :-

- Asteraceae [Option ID = 12731]

97) Which of the following is NOT a common second messenger in cell signaling?
[Question ID = 3185]

1. Ca^{2+} [Option ID = 12734]
2. Cyclic adenosine monophosphate [Option ID = 12735]
3. Tryptophan [Option ID = 12736]
4. Diacylglycerol [Option ID = 12737]

Correct Answer :-

- Tryptophan [Option ID = 12736]

98) What would you need to know to determine quantum yield of photosynthesis accurately?
[Question ID = 3186]

1. Amount of CO_2 fixed and O_2 released [Option ID = 12738]
2. Amount of starch synthesized [Option ID = 12739]
3. Amount of 3-phosphoglycerate synthesized [Option ID = 12740]
4. Amount of O_2 evolved and light absorbed [Option ID = 12741]

Correct Answer :-

- Amount of O_2 evolved and light absorbed [Option ID = 12741]

99) Which of the following nucleic acids is the MOST stable?
[Question ID = 3187]

1. DNA [Option ID = 12742]
2. mRNA [Option ID = 12743]
3. rRNA [Option ID = 12744]
4. tRNA [Option ID = 12745]

Correct Answer :-

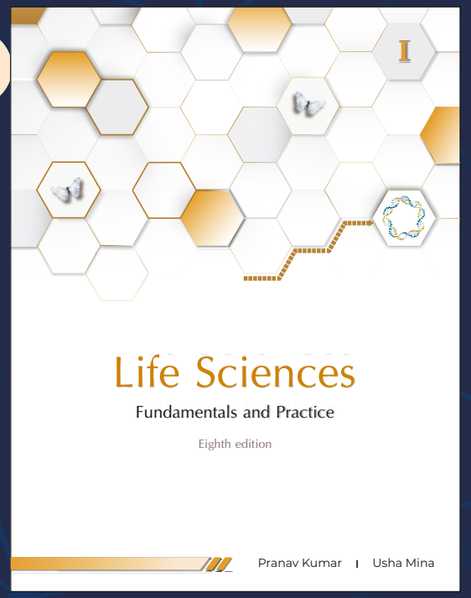
- DNA [Option ID = 12742]

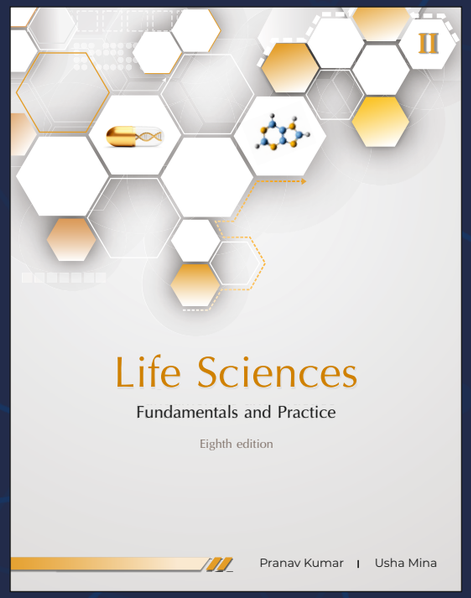
100) A nonsense mutation in the reading frame within the coding region of a gene is expected to result in
[Question ID = 3188]

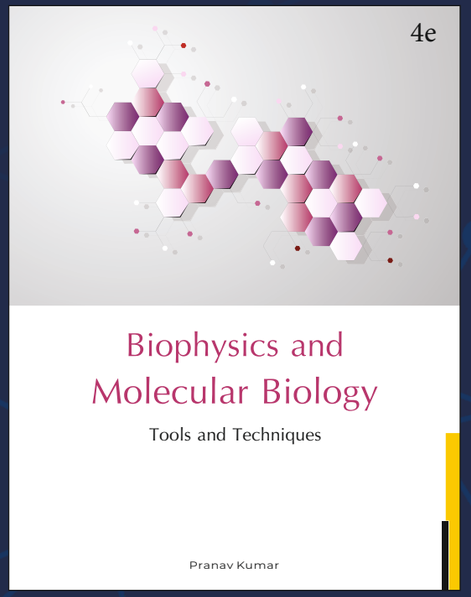
1. Decreased transcription [Option ID = 12746]
2. Premature translation termination [Option ID = 12747]
3. Ribosomal frameshift [Option ID = 12748]
4. Formation of a fusion protein. [Option ID = 12749]

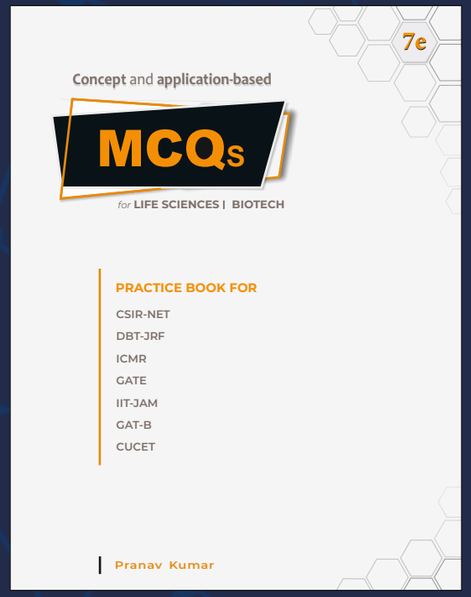
Correct Answer :-

- Premature translation termination [Option ID = 12747]









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