

DU PhD in Biochemistry

Topic:- DU_J19_PHD_BIOCHEM

1) Which of the following statement about protein structures and functions is likely to be False?

[Question ID = 15193]

1. Two proteins that share a significant degree of sequence similarity either with each other or with a third sequence also share an evolutionary origin and should share some structural features also [Option ID = 30770]
2. Two entirely different protein sequences from different evolutionary origins may fold into a similar structure [Option ID = 30769]
3. Ancient gene for a given protein structure may diverge in different species while maintaining the same basic structural features [Option ID = 30771]
4. Proteins that are members of the same family are likely to have same three-dimensional structures but different functions [Option ID = 30772]

Correct Answer :-

- Proteins that are members of the same family are likely to have same three-dimensional structures but different functions [Option ID = 30772]

2) Which of the following amino acid is not involved in the composition of glutathione?

[Question ID = 15189]

1. Glycine [Option ID = 30755]
2. Glutamine [Option ID = 30756]
3. Glutamate [Option ID = 30753]
4. Cysteine [Option ID = 30754]

Correct Answer :-

- Glutamine [Option ID = 30756]

3) Which of the following is NOT a change experienced by a typical cell committed for apoptosis?

[Question ID = 15208]

1. Cell swells and ultimately bursts [Option ID = 30831]
2. Loss of mitochondrial membrane functions [Option ID = 30832]
3. Cytoskeleton collapses [Option ID = 30829]
4. DNA breaks into fragments [Option ID = 30830]

Correct Answer :-

- Cell swells and ultimately bursts [Option ID = 30831]

4) Which of the following techniques is the most suitable for detecting a metabolite labelled with ^{13}C ?

[Question ID = 15179]

1. Mass spectrometry [Option ID = 30716]
2. Infra red spectroscopy [Option ID = 30713]
3. Nuclear magnetic resonance spectroscopy [Option ID = 30714]
4. Scintillation counting (detection of radioactivity) [Option ID = 30715]

Correct Answer :-

- Nuclear magnetic resonance spectroscopy [Option ID = 30714]

5) Which of the following properties is not associated with non-covalent interactions in proteins?

[Question ID = 15192]

1. Involves a chemical bond [Option ID = 30766]
2. Important for secondary and tertiary structural integrity [Option ID = 30768]
3. Weak interactions [Option ID = 30767]
4. Interaction in space [Option ID = 30765]

Correct Answer :-

- Involves a chemical bond [Option ID = 30766]

6) Which one of the following techniques will you use to identify more than 1000 differentially expressed genes in tumor tissues in one experiment?

[Question ID = 15224]

1. RAPD [Option ID = 30893]
2. ChIP assay [Option ID = 30895]
3. Genome sequencing [Option ID = 30894]
4. Microarrays [Option ID = 30896]

Correct Answer :-

- Microarrays [Option ID = 30896]

7) Which one of the following statements is correct?

[Question ID = 15221]

1. In all L-amino acids, only the C-terminal carbon atom is chiral [Option ID = 30882]
2. Phosphatidyl choline isolated from biological membranes is optically active [Option ID = 30884]
3. Deoxyribose is optically active [Option ID = 30881]
4. The specific rotation of sucrose will be the sum of the specific rotations of D-glucose and D-fructose [Option ID = 30883]

Correct Answer :-

- Deoxyribose is optically active [Option ID = 30881]

8) Which is true for size exclusion chromatography?

[Question ID = 15196]

1. Sample volume affects the resolution of separation of proteins [Option ID = 30783]
2. Width of the column affects the resolution of separation of proteins [Option ID = 30782]
3. Only a mixture of five to ten proteins can be well separated [Option ID = 30784]
4. Length of the column does not affect the resolution of separation of proteins [Option ID = 30781]

Correct Answer :-

- Sample volume affects the resolution of separation of proteins [Option ID = 30783]

9) Insects such as *Drosophila* undergo three molts before becoming a pupa and undergoing metamorphosis. Molting, which is also called 'ecdysis', is controlled by what hormone?

[Question ID = 15176]

1. Juvenile hormone [Option ID = 30702]
2. Auxin [Option ID = 30703]
3. Ecdysone [Option ID = 30701]
4. Cytokinin [Option ID = 30704]

Correct Answer :-

- Ecdysone [Option ID = 30701]

10) Following are the list of some proteins:

- 1) BCL-2
- 2) BCL-XL
- 3) A1
- 4) BAX

Which of the protein(s) is/are NOT anti-apoptotic?

[Question ID = 15213]

1. 2 and 4 only [Option ID = 30852]
2. 3 only [Option ID = 30850]
3. 4 only [Option ID = 30849]
4. 1 and 2 only [Option ID = 30851]

Correct Answer :-

- 4 only [Option ID = 30849]

11) Following are statements regarding terpene class of secondary metabolites in plants

[Question ID = 15223]

1. Pyrethroids are monoterpene esters [Option ID = 30892]
2. Diterpenes are 20 carbon compounds [Option ID = 30890]
3. All terpenes are derived from the union of 4-carbon elements [Option ID = 30891]
4. Isopentenyl diphosphate and its isomer combine to form larger terpenes [Option ID = 30889]

Correct Answer :-

- Diterpenes are 20 carbon compounds [Option ID = 30890]

12) Is there a difference between oncogenes and tumor suppressor genes?

[Question ID = 15177]

1. No, oncogenes and tumor suppressor genes both stimulate the development of cancer, even in the absence of their becoming mutated. [Option ID = 30706]
2. Yes, oncogenes are genes that can cause cancer when they become mutated to become proto-oncogenes, whereas tumor suppressor genes play no role in cancer. [Option ID = 30708]
3. Yes, oncogenes prevent cancer from forming unless they are mutated to become proto-oncogenes, whereas tumor suppressor genes stimulate the formation of cancer even in the absence of mutation. [Option ID = 30705]
4. Yes, oncogenes are mutated versions of genes that promote abnormal cell division (such as ras and myc), whereas tumor suppressor genes normally hold cell division in check when it is not appropriate (such as Rb and p53). [Option ID = 30707]

Correct Answer :-

- Yes, oncogenes are mutated versions of genes that promote abnormal cell division (such as ras and myc), whereas tumor suppressor genes normally hold cell division in check when it is not appropriate (such as Rb and p53). [Option ID = 30707]

13) In biosynthesis of cholesterol

[Question ID = 15180]

1. 3-hydroxy-3 methyl glutaryl CoA (HMG CoA) is synthesized by mitochondrial HMGCoAsynthetase [Option ID = 30717]
2. Condensation of two farnesyl pyrophosphates to form squalene is freely reversible [Option ID = 30720]
3. HMG CoA reductase catalyzes the rate limiting step [Option ID = 30718]
4. The conversion of mevalonic acid to farnesyl pyrophosphate proceeds via condensation of three molecules of mevalonic acid [Option ID = 30719]

Correct Answer :-

- HMG CoA reductase catalyzes the rate limiting step [Option ID = 30718]

14) After hemorrhage, a subject develops hypovolemia and hypotension. Following are some of the statements regarding homeostatic measure taken by the body after hemorrhage.

I. Increased release of vasopressin

II. Increased water retention and reduced plasma osmolality

III. Increased rate of afferent discharge from low pressure receptors of vascular system

IV. Decreased rate of afferent discharge from high pressure receptors of vascular system

Which one of the following is NOT correct in this condition?

[Question ID = 15222]

1. I and II [Option ID = 30886]
2. Only III [Option ID = 30887]
3. Only I [Option ID = 30885]
4. II and IV [Option ID = 30888]

Correct Answer :-

- Only III [Option ID = 30887]

15) During the process of exocytosis, SNAREs are needed for membrane to:

[Question ID = 15199]

1. Induce Signaling [Option ID = 30795]
2. Flip Flop [Option ID = 30794]
3. Undergo lateral diffusion [Option ID = 30793]
4. Fuse [Option ID = 30796]

Correct Answer :-

- Fuse [Option ID = 30796]

16) In a reticulocyte lysate the polynucleotide 5'-AUGUUUUUUUUU directs the synthesis of Met-Phe-Phe-Phe . In the presence of farsomycin, a new antibiotic perfected by Fluhardy Pharmaceuticals, this polymer directs synthesis of Met-Phe only. From this information, which of the following deductions could you make about farsomycin?

[Question ID = 15220]

1. It blocks translocation of peptidyl tRNA from the A-site to the P-site of the ribosome. [Option ID = 30880]
2. It prevents formation of the 80S initiation complex, which contains the initiator tRNA and both ribosomal subunits. [Option ID = 30877]
3. It inactivates peptidyl transferase activity on the large ribosomal unit. [Option ID = 30879]
4. It inhibits binding of aminoacyl – tRNA s to the A site in the ribosome [Option ID = 30878]

Correct Answer :-

- It blocks translocation of peptidyl tRNA from the A-site to the P-site of the ribosome. [Option ID = 30880]

17) In an enzyme-catalyzed reaction, how does V_{\max} and K_m change if the enzyme concentration is doubled while keeping all the reaction conditions unchanged, ensuring that substrate is not limiting?

[Question ID = 15186]

1. Both V_{\max} and K_m are doubled [Option ID = 30744]
2. V_{\max} is unchanged, while K_m is doubled [Option ID = 30742]
3. V_{\max} is doubled, while K_m is unchanged [Option ID = 30743]
4. V_{\max} is doubled, while K_m is halved [Option ID = 30741]

Correct Answer :-

- V_{\max} is doubled, while K_m is unchanged [Option ID = 30743]

18) Cell types are usually identified by using immuno-histochemistry technique. In such case, antibody has to be against:

[Question ID = 15202]

1. Cell surface proteins [Option ID = 30808]
2. Ribosomal proteins [Option ID = 30807]
3. Cytosolic proteins [Option ID = 30806]
4. Mitochondrial proteins [Option ID = 30805]

Correct Answer :-

- Cell surface proteins [Option ID = 30808]

19) In flies, frogs and chicks, gradients of morphogens determine the future antero-posterior (A-P) and dorso-ventral axes of the developing embryo. How is the A-P axis determined in *C. elegans*?

[Question ID = 15184]

1. Opposing gradients of chordin and BMP-4 establish the A-P axis. [Option ID = 30736]
2. Sperm entry leads to reorganization of the cytoskeleton and redistribution of maternally packaged PAR proteins, which in turn determine the A-P axis. [Option ID = 30734]
3. *Bicoid protein* is translated in the anterior of the fertilized egg leading to a gradient that determines the A-P axis [Option ID = 30733]
4. *Beta-catenin* becomes localized to the nucleus in the future anterior cells after fertilization. [Option ID = 30735]

Correct Answer :-

- Sperm entry leads to reorganization of the cytoskeleton and redistribution of maternally packaged PAR proteins, which in turn determine the A-P axis. [Option ID = 30734]

20) Dye injected into an epithelial cell might be able to enter into an adjacent cell through a :

[Question ID = 15209]

1. Desmosomes [Option ID = 30835]
2. Gap junction [Option ID = 30834]
3. Microtubule [Option ID = 30833]
4. Tight junction [Option ID = 30836]

Correct Answer :-

- Gap junction [Option ID = 30834]

21) A student is carrying out PCR-based site directed mutagenesis of a gene that is cloned in a cloning vector plasmid. The total size of this plasmid is 8kb. The student had repeatedly tried to perform the

mutagenesis experiment, however, there is no success. Which option of the following can be tried which will help in obtaining the mutants.

[Question ID = 15195]

1. the size of the primers may be decreased [Option ID = 30778]
2. the size of the primers may be increased [Option ID = 30779]
3. the gene can be cloned into a larger size plasmid [Option ID = 30780]
4. the gene can be cloned into a much smaller size plasmid [Option ID = 30777]

Correct Answer :-

- the gene can be cloned into a much smaller size plasmid [Option ID = 30777]

22) A study was conducted to compare the proteome of normal individuals and cancer patients to identify new biomarkers for cancer. The study employed the use of 2D-DIGE by labeling the normal samples with Cy3 and cancer patient samples with Cy5. The Cy2 labeling was also employed in the experiment because:

[Question ID = 15194]

1. There is no use of Cy2 labeling. The experiment could have been performed the same way with only two tags. [Option ID = 30776]
2. It will help in uniform labeling of the proteins from the cancer patient samples [Option ID = 30774]
3. Using three different colours will give rise to better analysis of the spots [Option ID = 30775]
4. It can act as an internal standard for normalization of all protein spots [Option ID = 30773]

Correct Answer :-

- It can act as an internal standard for normalization of all protein spots [Option ID = 30773]

23) "Heyflick's limit" refers to which one of the following phenomena?

[Question ID = 15206]

1. Cellular senescence *in vitro* [Option ID = 30822]
2. RNA transport [Option ID = 30824]
3. DNA repair [Option ID = 30821]
4. Protein synthesis [Option ID = 30823]

Correct Answer :-

- Cellular senescence *in vitro* [Option ID = 30822]

24) β -lactoglobulin promoter is used for expression of gene in:

[Question ID = 15198]

1. Liver [Option ID = 30789]
2. Mammary gland [Option ID = 30791]
3. Spleen [Option ID = 30790]
4. Lymph node [Option ID = 30792]

Correct Answer :-

- Mammary gland [Option ID = 30791]

25) If association behaviour is to be evaluated for a aggregation prone protein by analytical ultracentrifugation, which of the following is true?

[Question ID = 15197]

1. Sedimentation coefficient will decrease with increasing concentration [Option ID = 30786]
2. Sedimentation coefficient will increase with decreasing concentration [Option ID = 30788]
3. Sedimentation coefficient will increase with increasing concentration [Option ID = 30785]
4. Sedimentation coefficient will remain unchanged with increasing concentration [Option ID = 30787]

Correct Answer :-

- Sedimentation coefficient will increase with increasing concentration [Option ID = 30785]

26) A mature human RBC:

[Question ID = 15205]

1. Does not divide [Option ID = 30818]
2. Divides under stressful condition [Option ID = 30820]
3. Divides once a day [Option ID = 30817]
4. Divides every 120 days [Option ID = 30819]

Correct Answer :-

- Does not divide [Option ID = 30818]

27) Catabolism of which of the following amino acids requires the direct involvement of O₂?

[Question ID = 15191]

1. Histidine [Option ID = 30761]
2. Glutamine [Option ID = 30764]
3. Isoleucine [Option ID = 30763]
4. Phenylalanine [Option ID = 30762]

Correct Answer :-

- Phenylalanine [Option ID = 30762]

28) Anti-cancer vitamin is:

[Question ID = 15200]

1. Pyridoxine [Option ID = 30800]
2. Phylloquinone [Option ID = 30798]
3. Retinol [Option ID = 30797]
4. Thiamine [Option ID = 30799]

Correct Answer :-

- Retinol [Option ID = 30797]

29) Contrast the process of involution, epiboly and convergent extension.

[Question ID = 15181]

1. Involution is movement of cells toward an axis to extend that axis, epiboly is flattening and spreading of epithelial cells to increase the amount of surface they cover and convergent extension is the movement of cells inside the embryo as a coherent sheet [Option ID = 30721]
2. Involution is movement of cells inside the embryo as a coherent sheet, epiboly is a flattening and spreading epithelial cells to increase the amount of surface they cover and convergent extension is movement of cells toward an axis to extend that axis. [Option ID = 30722]
3. Involution is movement of cells inside the embryo as a coherent sheet, epiboly is movement of cells toward an axis to extend that axis and convergent extension is a flattening and spreading epithelial cells to increase the amount of surface they cover. [Option ID = 30724]

4. Involution is flattening of epithelial cells to increase the amount of surface they cover, epiboly is the movement of cells inside the embryo as a coherent sheet and convergent extension is movement of cells toward an axis to extend that axis. [Option ID = 30723]

Correct Answer :-

- Involution is movement of cells inside the embryo as a coherent sheet, epiboly is a flattening and spreading epithelial cells to increase the amount of surface they cover and convergent extension is movement of cells toward an axis to extend that axis. [Option ID = 30722]

30) End labeling of a DNA fragment is a prerequisite for Maxam Gilbert method of DNA sequencing. Which of the following enzymes is used to accomplish this?

[Question ID = 15217]

1. Restriction endonucleases [Option ID = 30868]
2. Polynucleotide kinase [Option ID = 30867]
3. DNA ligase [Option ID = 30865]
4. Taq polymerase [Option ID = 30866]

Correct Answer :-

- Polynucleotide kinase [Option ID = 30867]

31) Fluorescence microscopy is based on the ability of certain molecules to:

[Question ID = 15204]

1. Absorb light of a given wavelength and then emit light of a shorter wavelength [Option ID = 30816]
2. Absorb light of a given wavelength and then emit light of a longer wavelength [Option ID = 30815]
3. Absorb light of many different wavelengths [Option ID = 30814]
4. Continuously emit light of a constant wavelength [Option ID = 30813]

Correct Answer :-

- Absorb light of a given wavelength and then emit light of a longer wavelength [Option ID = 30815]

32) A Bronsted acid becomes _____ upon losing a proton

[Question ID = 15185]

1. its conjugate acid [Option ID = 30737]
2. its conjugate base [Option ID = 30738]
3. highly reactive [Option ID = 30740]
4. a hydronium ion [Option ID = 30739]

Correct Answer :-

- its conjugate base [Option ID = 30738]

33) In eukaryotic replication, priming of DNA synthesis and removal of RNA primer is catalysed by:

[Question ID = 15215]

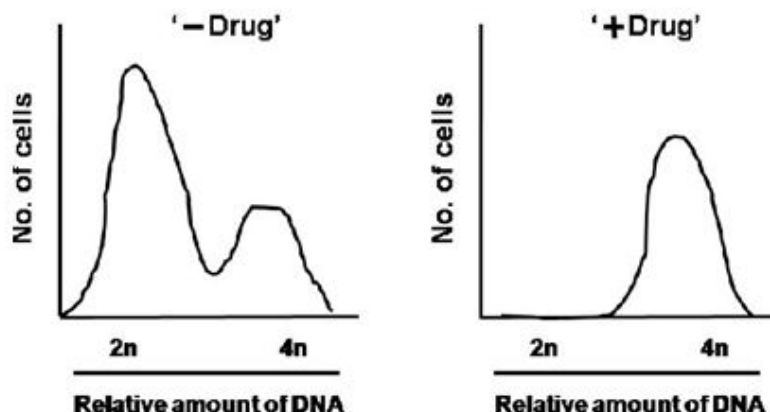
1. DNA Pol δ and FEN1, respectively. [Option ID = 30859]
2. DNA Pol ϵ and PCNA, respectively. [Option ID = 30860]
3. DNA Pol α and PCNA, respectively. [Option ID = 30857]
4. DNA Pol α and FEN1, respectively. [Option ID = 30858]

Correct Answer :-

- DNA Pol α and FEN1, respectively. [Option ID = 30858]

34)

To assess the impact of a newly identified drug when added to a culture of sub-confluent HeLa cells, a researcher analyzes the fluorescence activated cell sorting (FACS) profile of untreated (- Drug) cells versus treated (+ Drug) cells.



Based on the FACS profile shown above, this drug inhibits

[Question ID = 15212]

1. S phase of the cell cycle [Option ID = 30846]
2. G2 /M phase of the cell cycle [Option ID = 30847]
3. G1 phase of the cell cycle [Option ID = 30845]
4. G0 phase of cell cycle [Option ID = 30848]

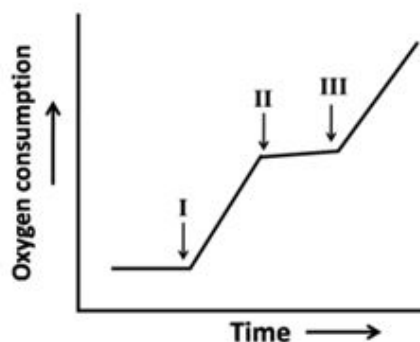
Correct Answer :-

- G2 /M phase of the cell cycle [Option ID = 30847]

35)

In a mitochondrial respiration experiment, a researcher observed the following profile of oxygen consumption upon addition of the following compounds at times I, II and III.

- (i) ADP + Pi
- (ii) Dinitrophenol, an uncoupler
- (iii) Oligomycin, an ATPase inhibitor
- (iv) Cyanide
- (v) Succinate



Which of the following describes the profile appropriately?

[Question ID = 15211]

1. I – b; II – d; III – e [Option ID = 30841]
2. I – a; II – d; III – c [Option ID = 30842]
3. I – a; II – c; III – b [Option ID = 30844]
4. I – a; II – e; III – c [Option ID = 30843]

Correct Answer :-

- I – a; II – c; III – b [Option ID = 30844]

36) For a FRET experiment, an oligonucleotide was labeled with Cy3 dye, which absorbs at 540 nm and fluoresces at 590 nm. Another oligonucleotide was labeled with Cy5 dye, which absorbs at 590 nm and emits fluorescence at 680 nm. Which of the following observations indicate a successful FRET experiment, whereby the two oligonucleotides anneal?

[Question ID = 15190]

1. Excitation at 540 nm results in fluorescence emission at 680 nm [Option ID = 30759]
2. Excitation at 540 nm results in fluorescence emission at 590 nm [Option ID = 30757]
3. Excitation at 540 nm results in no fluorescence emission [Option ID = 30760]
4. Excitation at 590 nm results in fluorescence emission at 680 nm [Option ID = 30758]

Correct Answer :-

- Excitation at 540 nm results in fluorescence emission at 680 nm [Option ID = 30759]

37) What are the *lin-4* and *lin-14* genes of *C. elegans*?

[Question ID = 15178]

1. *lin-4* and *lin-14* are genes that are named for their control of the first division, and hence the lineage of the AB and P1 cells [Option ID = 30710]
2. *lin-4* and *lin-14* both encode miRNAs that serve as cell-cell signaling molecules in *C. elegans* [Option ID = 30712]
3. *lin-4* and *lin-14* are *C. elegans* versions of the HOX genes [Option ID = 30711]
4. *lin-4* encodes a miRNA that represses *lin-14* translation, which in turn regulates the timing of larval development [Option ID = 30709]

Correct Answer :-

- *lin-4* encodes a miRNA that represses *lin-14* translation, which in turn regulates the timing of larval development [Option ID = 30709]

38) What is the isoelectric point (pI) of the amino acid lysine with $pK_{a1} = 2.2$, $pK_{a2} = 9.0$ and $pK_{a3} = 10.8$.

[Question ID = 15187]

1. 7.3 [Option ID = 30745]
2. 5.6 [Option ID = 30747]
3. 9.9 [Option ID = 30746]
4. 9 [Option ID = 30748]

Correct Answer :-

- 9.9 [Option ID = 30746]

39) What would happen to red blood cells if the haem group were removed from haemoglobin?

[Question ID = 15175]

1. White blood cells would not be able to reproduce. [Option ID = 30699]

2. Red blood cells would not be able to reproduce. [Option ID = 30698]
3. Red blood cells would not be able to transport oxygen [Option ID = 30697]
4. Blood clot formation would be inhibited. [Option ID = 30700]

Correct Answer :-

- Red blood cells would not be able to transport oxygen [Option ID = 30697]

40) Which of the following changes in the gene encoding a lysosomal protein is not expected to impair the translocation of the protein across the ER membrane? [Question ID = 15188]

1. The conversion of the two leucine codons and one phenylalanine codon near the translation initiation codon to an isoleucine codon, an aspartic acid codon and a glutamic acid codon, respectively [Option ID = 30752]
2. The conversion of the sole lysine codon after the translation initiation codon to an arginine codon [Option ID = 30750]
3. The conversion of the sole lysine codon after the translation initiation codon to an aspartic acid codon [Option ID = 30751]
4. The deletion of the nucleotide specifying the 25 amino acids following the translation initiation codon [Option ID = 30749]

Correct Answer :-

- The conversion of the sole lysine codon after the translation initiation codon to an arginine codon [Option ID = 30750]

41) Competitive inhibition is overcome by adding substrate shows that:

[Question ID = 15210]

1. enzymes are pH dependent [Option ID = 30839]
2. enzymes are specific in nature [Option ID = 30838]
3. enzymes are biocatalysts [Option ID = 30837]
4. enzymes are made of proteins [Option ID = 30840]

Correct Answer :-

- enzymes are specific in nature [Option ID = 30838]

42) The technique known as two-hybrid analysis for detecting interacting gene products depend on

[Question ID = 15218]

1. Direct binding of a Gal4p activation domain to a DNA sequence in the promoter region. [Option ID = 30870]
2. Activation of DNA polymerase by the nearby binding of hybridizing protein complexes. [Option ID = 30869]
3. Stimulation of transcription by interaction of two Gal4p domains via fused protein sequences. [Option ID = 30872]
4. Having a promoter that responds directly to one of the two proteins whose interactions is being measured. [Option ID = 30871]

Correct Answer :-

- Stimulation of transcription by interaction of two Gal4p domains via fused protein sequences. [Option ID = 30872]

43) The enzyme of *E.coli* is a nuclease that initiates the repair of double stranded DNA breaks by homologous recombination

[Question ID = 15207]

1. RNA polymerase [Option ID = 30827]
2. DNA glycosylase [Option ID = 30825]
3. DNA ligase [Option ID = 30826]
4. DNA polymerase [Option ID = 30828]

Correct Answer :-

- DNA glycosylase [Option ID = 30825]

44) The putative interaction between two proteins was identified by yeast two hybrid assays. Which of the following technique cannot be employed to further confirm the interaction?

[Question ID = 15182]

1. Electrophoretic Mobility Shift Assay [Option ID = 30728]
2. Fluorescence Resonance Energy Transfer analysis [Option ID = 30726]
3. Protein Microarray [Option ID = 30727]
4. Pull Down Assay [Option ID = 30725]

Correct Answer :-

- Electrophoretic Mobility Shift Assay [Option ID = 30728]

45) The molecule which acts directly on an enzyme to lower its catalytic rate is

[Question ID = 15216]

1. regulator [Option ID = 30863]
2. repressor [Option ID = 30861]
3. inhibitor [Option ID = 30864]
4. modulator [Option ID = 30862]

Correct Answer :-

- inhibitor [Option ID = 30864]

46) The pluripotency of the inner cell mass in mammals is maintained by a core of three transcription factors namely

[Question ID = 15214]

1. Oct 4, Cdx 2 and Nanog [Option ID = 30856]
2. Oct 4, Sox 2 and Cdx 2 [Option ID = 30854]
3. Oct 4, Sox 2 and Nanog [Option ID = 30853]
4. Sox 2, Nanog and Cdx 2 [Option ID = 30855]

Correct Answer :-

- Oct 4, Sox 2 and Nanog [Option ID = 30853]

47) The precursor of all N-linked oligosaccharides contains:

[Question ID = 15201]

1. Two glucose, nine mannose and three N-acetylglucosamine. [Option ID = 30802]
2. Two glucose, eight mannose and four N-acetylglucosamine. [Option ID = 30804]
3. Three glucose, eight mannose and three N-acetylglucosamine. [Option ID = 30801]
4. Three glucose, nine mannose and two N-acetylglucosamine. [Option ID = 30803]

Correct Answer :-

- Three glucose, nine mannose and two N-acetylglucosamine. [Option ID = 30803]

48) The most efficient way to turn off glycogen degradation is to:

[Question ID = 15203]

1. Increase the activity of phosphatase [Option ID = 30811]
2. Increase the activity of phosphodiesterases [Option ID = 30810]
3. Decrease the intracellular levels of cAMP [Option ID = 30812]
4. Decrease the activity of phosphorylase kinase [Option ID = 30809]

Correct Answer :-

- Decrease the intracellular levels of cAMP [Option ID = 30812]

49) The A_{260}/A_{280} ratio of a DNA sample was observed to be 1.2. An increase in this ratio can be obtained by subjecting the DNA sample to

[Question ID = 15183]

1. Both A and B [Option ID = 30731]
2. TCA treatment [Option ID = 30730]
3. Saline treatment [Option ID = 30732]
4. Phenol extraction [Option ID = 30729]

Correct Answer :-

- Both A and B [Option ID = 30731]

50) The phospholipids of plasma membranes routinely exhibit which of the following Forms of movement?

I. Diffusion in the plane of the bilayer

II. Translocation from one side of the bilayer to the other side

III. Rotation of fatty-acid residues around saturated carbon atoms

[Question ID = 15219]

1. III only [Option ID = 30875]
2. I and III only [Option ID = 30876]
3. I only [Option ID = 30873]
4. II only [Option ID = 30874]

Correct Answer :-

- I and III only [Option ID = 30876]