

# TELANGANA RESIDENTIAL EDUCATIONAL INSTITUTIONS RECRUITMENT BOARD TREI-RB

## Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

<b>Question Paper Name :</b>	Bio Chemistry 6th Aug 2023 Shift 2
<b>Subject Name :</b>	Bio Chemistry
<b>Creation Date :</b>	2023-08-06 15:25:00
<b>Duration :</b>	120
<b>Total Marks :</b>	100
<b>Display Marks:</b>	Yes
<b>Calculator :</b>	None
<b>Magnifying Glass Required? :</b>	No
<b>Ruler Required? :</b>	No
<b>Eraser Required? :</b>	No
<b>Scratch Pad Required? :</b>	No
<b>Rough Sketch/Notepad Required? :</b>	No
<b>Protractor Required? :</b>	No
<b>Show Watermark on Console? :</b>	Yes
<b>Highlighter :</b>	No
<b>Auto Save on Console?</b>	Yes
<b>Change Font Color :</b>	No
<b>Change Background Color :</b>	No
<b>Change Theme :</b>	No
<b>Help Button :</b>	No

**Show Reports :** No  
**Show Progress Bar :** No

## Bio Chemistry

**Group Number :** 1  
**Group Id :** 59425345  
**Group Maximum Duration :** 0  
**Group Minimum Duration :** 120  
**Show Attended Group? :** No  
**Edit Attended Group? :** No  
**Break time :** 0  
**Group Marks :** 100  
**Is this Group for Examiner? :** No  
**Examiner permission :** Cant View  
**Show Progress Bar? :** No

## Bio Chemistry

**Section Id :** 59425353  
**Section Number :** 1  
**Section type :** Online  
**Mandatory or Optional :** Mandatory  
**Number of Questions :** 100  
**Number of Questions to be attempted :** 100  
**Section Marks :** 100  
**Enable Mark as Answered Mark for Review and Clear Response :** Yes  
**Maximum Instruction Time :** 0  
**Sub-Section Number :** 1

Sub-Section Id : 59425360

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 1 Question Id : 5942534408 Question Type : MCQ Option Shuffling : Yes Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

The allosteric inhibitor of TCA cycle is

Options :

1. ✘ AMP

2. ✔ ATP

3. ✘ NAD

4. ✘ FAD

Question Number : 2 Question Id : 5942534409 Question Type : MCQ Option Shuffling : Yes Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

In TCA cycle, CO<sub>2</sub> is released from:

Options :

1. ✘ Pyruvate dehydrogenase

2. ✔ Isocitrate dehydrogenase

3. ✘ Succinyl CoA

4. ✘ Malate dehydrogenase

**Question Number : 3 Question Id : 5942534410 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

In glycolysis ATP is utilized by the reaction catalyzed by:

**Options :**

1. ✔ Glucokinase

2. ✘ Phosphoglycerate kinase

3. ✘ Glucose 6 phosphatase

4. ✘ Pyruvate kinase

**Question Number : 4 Question Id : 5942534411 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Match the following components of complement pathway with most appropriate function of them:

- |            |  |
|------------|--|
| A) T cells | i. Have CD20 receptor on surface             |
| B) B cells | ii. First organ to become lymphoid           |
| C) Spleen  | iii. Largest lymphoid organ                  |
| D) Thymus  | iv. Blast transformation with concanavalin A |

**Options :**

1. ✘ A-i, B-iv, C-iii, D-ii

2. ✘ A-iv, B-i, C-ii, D-iii

3. ✘ A-i, B-iv, C-ii, D-iii

4. ✔ A-iv, B-i, C-iii, D-ii

**Question Number : 5 Question Id : 5942534412 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Compare statement I and II and select appropriate explanation.

Statement I: Cytokines are pleiotropic in their effect.

Statement II: Cytokines can act directly on the cells producing them.

**Options :**

1. ✘ I and II are true statements and II is correct explanation of I

2. ✔ I and II are true statements but II is not correct explanation of I

3. ✘ I is true but II is false

4. ✘ Both I and II are false

**Question Number : 6 Question Id : 5942534413 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Mouse monoclonal antibodies produced by hybridoma technology are humanized by manipulation to make chimeric antibodies consisting of

**Options :**

1. ✘ Human variable region, murine constant region
2. ✔ Human constant region, murine variable region
3. ✘ Human heavy chain, murine light chain
4. ✘ Human light chain, murine heavy chain

**Question Number : 7 Question Id : 5942534414 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which of the following is responsible for opening the calcium ion channel during T-helper cell stimulation

**Options :**

1. ✘ CD28

2. ✘ CD80

3. ✘ Protein kinase C

4. ✔ Inositol triphosphate

**Question Number : 8 Question Id : 5942534415 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

L-amino acids are absorbed from intestine by

**Options :**

1. ✔ Active transport

2. ✘ Pinocytosis

3. ✘ Passive diffusion

4. ✘ Facilitated diffusion

**Question Number : 9 Question Id : 5942534416 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Vitamin K antagonist is

**Options :**

1. ✓ Coumarin

2. ✗ Panthenol

3. ✗ Pantene

4. ✗ Apocarotenal

**Question Number : 10 Question Id : 5942534417 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Match items in group I with the correct options from group II

Group I	Group II
A) VNTR sequence	i. Gene regulation on the same chromosome
B) Leader sequence	ii. Ribosome binding site
C) SD sequence	iii. DNA finger printing
D) cis-acting sequence	iv. Functions in attenuation

**Options :**

1. ✗ A-iii, B-i, C-iv, D-ii

2. ✓ A-iii, B-iv, C-ii, D-i

3. ✗ A-ii, B-iii, C-i, D-iv

4. ✗ A-iii, B-i, C-ii, D-iv



**Question Number : 11 Question Id : 5942534418 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

In microarray which sequence of gene must be preferred for preparing target sequence on microarray chip to investigate genome wide expressions?

**Options :**

1. ✓ 5' region from coding DNA sequence and 5' untranslated region
2. ✗ 3' region from coding DNA sequence and 3' untranslated region
3. ✗ Any part from coding DNA sequence
4. ✗ Sequence specifically from intron 1 of gene

**Question Number : 12 Question Id : 5942534419 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

An example of phagemid vector

**Options :**

1. ✗ pUC 18
2. ✗ pBR322
3. ✗ pGEX-4T1

4. ✓ pBluescript II KS

**Question Number : 13 Question Id : 5942534420 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

'One gene one enzyme' concept proposed by

**Options :**

1. ✗ Avery and McLeod

2. ✓ Beadle and Tatum

3. ✗ Jacob and Monad

4. ✗ Meselson and Stahl

**Question Number : 14 Question Id : 5942534421 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Compare statement I and II and select appropriate explanation

Statement I : Operons are regulated by both positive and negative regulatory elements:

Statement II: In Ara Operon both negative regulation by single regulatory protein is

**Options :**

1. ✗ Statement I is correct and Statement II is wrong

2. ✘ Statement I is wrong and Statement II is correct

3. ✔ Both Statements I and II are correct

4. ✘ Both Statements I and II are wrong

**Question Number : 15 Question Id : 5942534422 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Nuclear receptors belong to which class of transcription factor?

**Options :**

1. ✘ Helix-loop-helix proteins

2. ✘ Helix-turn-helix proteins

3. ✘ Leucine zipper proteins

4. ✔ Zinc finger proteins

**Question Number : 16 Question Id : 5942534423 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

A compound serving a link between citric acid cycle and urea cycle is

**Options :**

1. ✘ Malate

2. ✘ Succinate

3. ✔ Fumarate

4. ✘ Citrate

**Question Number : 17 Question Id : 5942534424 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Compare statement I and II and select appropriate explanation

Statement I : In glycolysis, the cleavage of fructose-6 phosphate into two triose phosphate molecules:

Statement II : An aldolase enzyme catalyzes formation of two triose phosphate molecules in Glycolysis:

**Options :**

1. ✘ Statement I is correct and Statement II is wrong

2. ✔ Statement I is wrong and Statement II is correct

3. ✘ Both Statements I and II are correct

4. ✘ Both Statements I and II are wrong

**Question Number : 18 Question Id : 5942534425 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Compare statement I and II and select appropriate explanation:

Statement I: Biotin is an important cofactor for metabolic enzymes;

Statement II: Deficiency of biotin results in decrease in Amino acid synthesis;

**Options :**

1. ✓ Statement I is correct and Statement II is wrong
2. ✘ Statement I is wrong and Statement II is correct
3. ✘ Both Statements I and II are correct
4. ✘ Both Statements I and II are wrong

**Question Number : 19 Question Id : 5942534426 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Compare statement I and II and select appropriate explanation:

Statement I: Eukaryotic RNA polymerase contains more than 12 subunits;

Statement II: There are three different types of Eukaryotic RNA polymerases;

**Options :**

1. ✘ Statement I is correct and Statement II is wrong
2. ✘ Statement I is wrong and Statement II is correct

3. ✓ Both Statements I and II are correct

4. ✘ Both Statements I and II are wrong

Question Number : 20 Question Id : 5942534427 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

The immunoglobulin that crosses placenta

- A) IgG
- B) IgM
- C) IgA

Options :

1. ✓ A only

2. ✘ C only

3. ✘ A & C only

4. ✘ B & C only

Question Number : 21 Question Id : 5942534428 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Arrange the following in the ascending order of Molecular weight.

- A) HDLs
- B) LDLs
- C) Chylomicrons
- D) VLDLs

**Options :**

1. ✘ D, B, A, C

2. ✔ A, B, D, C

3. ✘ A, D, C, B

4. ✘ C, D, A, B

**Question Number : 22 Question Id : 5942534429 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Match the following from Panel A with panel B

Panel A	Panel B
A) Chromosome Walking	i. cDNA Library
B) mRNA	ii. Screening libraries
C) GFP-Vector	iii. Genomic Library
D) Plaque lift	iv. Fusion protein

**Options :**

1. ✔ A-iii, B-i, C-iv, D-ii

2. ✘ A-iv, B-ii, C-iii, D-i

3. ✘ A-i, B-iii, C-ii, D-iv

4. ✘ A-ii, B-i, C-iv, D-iii

Question Number : 23 Question Id : 5942534430 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Match the following from Panel A with panel B

Panel A	Panel B
A) Prokaryotes	i. 80s ribosome
B) Eukaryotes	ii. 16s rRNA
C) 30s ribosomal subunit	iii. 23s rRNA
D) 50s ribosomal subunit	iv. 70s ribosome

Options :

1. ✘ A-iv, B-ii, C-iii, D-i

2. ✘ A-i, B-iii, C-iv, D-ii

3. ✔ A-iv, B-i, C-ii, D-iii

4. ✘ A-ii, B-iv, C-i, D-iii

Question Number : 24 Question Id : 5942534431 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25



Match Amino acid in Panel A with single letter abbreviation in panel B

Panel A	Panel B
A) Lysine	i. W
B) Tryptophan	ii. D
C) Glutamine	iii. Q
D) Aspartic acid	iv. K

Options :

- ✘ A-iv, B-ii, C-iii, D-i
- ✘ A-i, B-iii, C-iv, D-ii
- ✘ A-ii, B-iv, C-i, D-iii
- ✔ A-iv, B-i, C-iii, D-ii

Question Number : 25 Question Id : 5942534432 Question Type : MCQ Option Shuffling : Yes Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Arrange the DNA double helix type with increased number of base pairs per helix turn:

DNA helix type :

- Z type helix
- A type helix
- B type helix

Options :

- ✔ C, B, A
- ✘ B, A, C
-

✘ A, C, B

4. ✘ C, A, B

**Question Number : 26 Question Id : 5942534433 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Arrange the fatty acids in ascending order with reference to number of carbon atoms present

- A) Palmitate
- B) Lignocerate
- C) Arachodonate
- D) Oleate

**Options :**

1. ✘ A, B, C, D

2. ✘ A, C, B, D

3. ✔ A, D, C, B

4. ✘ A, D, B, C

**Question Number : 27 Question Id : 5942534434 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Match the amino acid given in panel A with their physico-chemical properties mentioned in Panel B

Panel A	Panel B
A) Glutamic acid	i. non-polar aromatic
B) Leucine	ii. non-polar aliphatic
C) Tryptophan	iii. acidic
D) Lysine	iv. basic

Options :

- ✘ A-iii, B-i, C-iv, D-ii
- ✘ A-iv, B-ii, C-iii, D-i
- ✘ A-i, B-iii, C-iv, D-ii
- ✔ A-iii, B-ii, C-i, D-iv

Question Number : 28 Question Id : 5942534435 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Proteins are hydrolyzed by enzymes and chemicals: Pair the statements that fits best

- Proteolytic enzymes specifically cleave peptide bonds
- Hydroxylamine specifically cleaves peptide bond associated with cysteine
- Trypsin cleaves peptide bond carboxyl side of lysine and arginine
- Thrombin cleaves peptide amino side of arginine

Options :

- ✔ A and C only
- ✘ A and D only

3. ✘ B and C only

4. ✘ C and D only

**Question Number : 29 Question Id : 5942534436 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Pick the correct statements below:

- A) All proteins are made as zymogens
- B) Insulin is synthesized as a zymogen
- C) Zymogen proteins need proteolytic cleavage for activation
- D) Carboxypeptidase is synthesised as a zymogen

**Options :**

1. ✘ A and B only

2. ✘ B and D only

3. ✔ C and D only

4. ✘ A and C only

**Question Number : 30 Question Id : 5942534437 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Pick the correct statements with reference to enzymes and cofactors:

- A) All Enzymes need cofactors for their activity
- B) Some enzymes need metals as cofactor
- C) Glycogen phosphorylase needs Coenzyme A as cofactor
- D) Urease needs  $Ni^{+2}$  as cofactor

**Options :**

- 1. ✘ C and D only
- 2. ✔ B and D only
- 3. ✘ A and C only
- 4. ✘ B and C only

**Question Number : 31 Question Id : 5942534438 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Some Naturally occurring fatty acids have more than two double bonds:

- A) Palmitoleate
- B) Oleate
- C) Arachidonate
- D) Linolenate

**Options :**

- 1. ✘ A and B only
- 2. ✘ A and C only
- 3. ✔ C and D only

4. ✘ A, C and D only

Question Number : 32 Question Id : 5942534439 Question Type : MCQ Option Shuffling : Yes Is  
Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum  
Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Pair the statements that fits best:

Score epimers from Carbohydrates given below;

- A) D-Glucose
- B) D-Ribulose
- C) D-Fructose
- D) D-Mannose

Options :

1. ✘ A and B only

2. ✘ A and C only

3. ✔ A and D only

4. ✘ C and D only

Question Number : 33 Question Id : 5942534440 Question Type : MCQ Option Shuffling : Yes Is  
Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum  
Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Functionally active miRNA is:

- A) Double stranded RNA
- B) Single stranded RNA
- C) RNA coupled with proteins
- D) RNA coupled with DNA

**Options :**

- 1. ✓ B and C only
- 2. ✗ A and C only
- 3. ✗ A, C, and D only
- 4. ✗ B and D only

**Question Number : 34 Question Id : 5942534441 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which of the following statements support B lymphocytes changing the class of antibodies being expressed:

- A) B lymphocytes can make IgA instead of IgM
- B) The class switch do not alter the specificity of IgA and IgM towards antigen
- C) The heavy chains have different variable regions after class switching
- D) Heavy chains have same constant region after class switching

**Options :**

- 1. ✓ A and B only
- 2. ✗ A and C only

3. ✘ A and D only

4. ✘ A, B, C and D

**Question Number : 35 Question Id : 5942534442 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Different human immunoglobulins have different heavy chains. Pick the correct heavy chain and immunoglobulin type.

- A) IgG has alpha heavy chain
- B) IgD has delta heavy chain
- C) IgG has gamma heavy chain
- D) IgD has epsilon heavy chain

**Options :**

1. ✘ A and C only

2. ✘ A and B only

3. ✘ A, C and D only

4. ✔ B and C only

**Question Number : 36 Question Id : 5942534443 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**



Isozymes catalyse same reactions. While

- A) Isozymes are different proteins
- B) Isozymes exhibit different physical properties
- C) Isozymes exhibit different kinetic properties
- D) Isozymes exhibit similar physical properties

**Options :**

- 1. ✓ A, B, C only
- 2. ✗ B, C, D only
- 3. ✗ A, B, D only
- 4. ✗ A, C, D only

**Question Number : 37 Question Id : 5942534444 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

The following statement /s regarding coenzyme use in metabolism is/are correct:

- A) Preferred coenzyme in catabolism is  $\text{NAD}^+$
- B) Preferred coenzyme in anabolism is  $\text{NADP}^+$

**Options :**

- 1. ✗ A is correct
- 2. ✗ B is correct
- 3. ✓ Both A and B are correct

4. ✘ Both A and B are incorrect

Question Number : 38 Question Id : 5942534445 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Match the following:

- |                                |                       |
|--------------------------------|-----------------------|
| A) Gel filtration              | i. C-18 Matrix        |
| B) Affinity chromatography     | ii. CM-Sepharose      |
| C) Ion-exchange chromatography | iii. SephadexG-200    |
| D) Hydrophobic chromatography  | iv. Protein A agarose |

Options :

1. ✘ A-iii, B-i, C-iv, D-ii

2. ✘ A-iv, B-ii, C-iii, D-i

3. ✘ A-i, B-iii, C-iv, D-ii

4. ✔ A-iii, B-iv, C-ii, D-i

Question Number : 39 Question Id : 5942534446 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

The genetic code is not universal. Pick correct answer(s) supporting the statement.

- A) AUA for Methionine instead of Isoleucine
- B) UGA for tyrosine instead of stop
- C) AGA for stop instead of Arginine
- D) AUA for tryptophan instead of Isoleucine

**Options :**

- 1. ✓ A and C only
- 2. ✗ B and C only
- 3. ✗ C and D only
- 4. ✗ B and D only

**Question Number : 40 Question Id : 5942534447 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

RNA polymerase synthesized RNA from DNA template; Pick correct answer(s) supporting the statement

- A) RNA polymerase transcribes + strand
- B) RNA synthesis does not require primer
- C) RNA synthesis occurs in 5' to 3' direction
- D) Promoter sequences at 3' end is required for initiation of RNA synthesis

**Options :**

- 1. ✗ A and B only
- 2. ✓ B and C only

3. ✘ C and D only

4. ✘ B and D only

**Question Number : 41 Question Id : 5942534448 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Assertion : skeletal Muscle fibers have multiple nuclei.

Reason : Each muscle fiber is a product of the fusion of large numbers of mononucleated osteoblasts.

**Options :**

1. ✘ Assertion and Reason are true statements and reason is correct explanation of assertion.

2. ✘ Assertion and Reason are true statements but reason is not correct explanation of assertion.

3. ✔ Assertion is true but reason is false

4. ✘ Both Assertion and Reason are false

**Question Number : 42 Question Id : 5942534449 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Ketone bodies are formed in

**Options :**

1. ✘ Kidney
2. ✔ Liver
3. ✘ Lung
4. ✘ Spleen

**Question Number : 43 Question Id : 5942534450 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

All of the following processes occur rapidly in the membrane lipid bilayer except:

**Options :**

1. ✘ Lateral diffusion of phospholipids
2. ✔ Transbilayer diffusion of phospholipids
3. ✘ Flexing of fatty acyl side chains
4. ✘ Rotation of phospholipids around their long axes

**Question Number : 44 Question Id : 5942534451 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which of the following is not a metabotropic receptor?

**Options :**

1. ✘ GABA-A
2. ✘ Glutamate
3. ✔ Glycine
4. ✘ Histamines

**Question Number : 45 Question Id : 5942534452 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Hypogonadism occurs due to the deficiency of

**Options :**

1. ✘ Copper
2. ✘ Chromium
3. ✔ Zinc
4. ✘ Manganese

Question Number : 46 Question Id : 5942534453 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Match items in group I with the correct options from group II

Group I	Group II
A) VNTR sequence	i. Gene regulation on the same chromosome
B) Leader sequence	ii. Ribosome binding site
C) SD sequence	iii. DNA finger printing
D) cis-acting sequence	iv. Functions in attenuation

Options :

1. ✘ A-iii, B-i, C-iv, D-ii

2. ✔ A-iii, B-iv, C-ii, D-i

3. ✘ A-ii, B-iii, C-i, D-iv

4. ✘ A-iii, B-i, C-ii, D-iv

Question Number : 47 Question Id : 5942534454 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Number of Carbon atoms in cholesterol molecule are:

Options :

1. ✔ 27

2.

✘ 28

3. ✘ 29

4. ✘ 30

**Question Number : 48 Question Id : 5942534455 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Transgenic plant is prepared by introduction of gene 'X'. It was observed that out of 100 transgenic plant only 70 of them showing high level expression of gene 'X' while rest of 30 display very low level of expression. The probable reason is;

**Options :**

1. ✘ Suppression effect of gene X

2. ✘ Knockdown effect of gene X

3. ✔ Gene silencing effect

4. ✘ Co-suppression effect of gene X

**Question Number : 49 Question Id : 5942534456 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**



A restriction endonuclease recognises an 8bp unbiased conserved sequence as its cleavage site. How many fragments are produced when it is used to digest 4kb plasmid having only one recognition site for this enzyme?

**Options :**

1. ✘ 2

2. ✔ 1

3. ✘ 5

4. ✘ 50

**Question Number : 50 Question Id : 5942534457 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

An example of phagemid vector

**Options :**

1. ✘ pUC 18

2. ✘ pBR322

3. ✘ pGEX-4T1

4. ✔ pBluescript II KS

Question Number : 51 Question Id : 5942534458 Question Type : MCQ Option Shuffling : Yes Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

p10 promoter is associated with:

Options :

1. ✘ Bacterial expression
2. ✘ Mammalian cells expression
3. ✔ Baculovirus expression
4. ✘ Adenoviral expression

Question Number : 52 Question Id : 5942534459 Question Type : MCQ Option Shuffling : Yes Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Localization of a protein can be studied by constructing following fusion protein

Options :

1. ✘ CAT
2. ✘ His tag
3. ✘ Luciferase
4. ✔ GFP

**Question Number : 53 Question Id : 5942534460 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

The following is the best method to transfer DNA into plant cell

**Options :**

1. ✘ Microinjection
2. ✔ Gene gun
3. ✘ Liposomes
4. ✘ Transformation of competent cells

**Question Number : 54 Question Id : 5942534461 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

cDNA libraries of eukaryotes consist of

**Options :**

1. ✘ Introns only
2. ✔ Exons only
3. ✘ Both Introns and Exons

4. ✘ Neither Introns nor Exons

**Question Number : 55 Question Id : 5942534462 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

A variant of PCR that uses high temperature before the polymerase is added to reduce non-specific primer binding is;

**Options :**

1. ✘ Nested PCR

2. ✘ Real time PCR

3. ✘ Inverse PCR

4. ✔ Hot start PCR

**Question Number : 56 Question Id : 5942534463 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

One of the following is an example of retrotransposon

**Options :**

1. ✘ P element in Drosophila

2. ✘ Ac-Ds in maize

3. ✔ Ty elements in yeast

4. ✘ Copia element in Drosophila

**Question Number : 57 Question Id : 5942534464 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which of the following promoter is extensively used for cloning in dicots?

**Options :**

1. ✘ Vicilin

2. ✘ Extensin

3. ✔ 35 S

4. ✘ Adh1

**Question Number : 58 Question Id : 5942534465 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

RAPD is generated by using

**Options :**

1. ✓ A single arbitrary primer
2. ✗ Single sequence specific primer
3. ✗ Two arbitrary primers
4. ✗ A pair of sequence specific primers

**Question Number : 59 Question Id : 5942534466 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Golden rice has transgenes that provide which enzyme activities?

**Options :**

1. ✗ Phytoene synthase
2. ✗ Phytoene desaturase
3. ✗ Lycopene  $\beta$ -cyclase
4. ✓ Phytoene synthase, Phytoene desaturase, Lycopene  $\beta$ -cyclase

**Question Number : 60 Question Id : 5942534467 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which viral transduction expression vectors are used for in vivo gene transfer in mammalian hosts?

**Options :**

1. ✘ Adeno-associated virus
2. ✘ Baculovirus
3. ✔ Adeno-associated virus and Baculovirus
4. ✘ Vaccinia virus

**Question Number : 61 Question Id : 5942534468 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

The variant of PCR used for site directed mutagenesis

**Options :**

1. ✔ Overlap extension PCR
2. ✘ Hot start PCR
3. ✘ Touchdown PCR
4. ✘ Anchored PCR

**Question Number : 62 Question Id : 5942534469 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Enzymatic technique of DNA sequencing was developed by

**Options :**

1. ✘ Maxam and co-workers
2. ✘ Gilbert and co-workers
3. ✔ Sanger and co-workers
4. ✘ Collins and co-workers

**Question Number : 63 Question Id : 5942534470 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

The first somatic hybrid was developed by

**Options :**

1. ✘ Melcher
2. ✘ J. Power
3. ✘ E. Cocking



4. ✓ P. Carlson

**Question Number : 64 Question Id : 5942534471 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Assertion: Xeroderma pigmentosum patients are not advised to go out in sunlight

Reason: Failure in RNA repair in skin may lead to cancer

**Options :**

1. ✘ Assertion and Reason are true statements and reason is correct explanation of assertion
2. ✘ Assertion and Reason are true statements but reason is not correct explanation of assertion
3. ✓ Assertion is true but reason is false
4. ✘ Both Assertion and Reason are false

**Question Number : 65 Question Id : 5942534472 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Operon having positive and negative regulation by single regulatory protein is

**Options :**

1. ✘ Lac operon

2. ✘ Trp operon

3. ✔ Ara operon

4. ✘ His operon

**Question Number : 66 Question Id : 5942534473 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Statement I: Cytokines are pleiotropic in their effect.

Statement II: Cytokines can act directly on the cells producing them.

**Options :**

1. ✘ I and II are true statements and II is correct explanation of I

2. ✔ I and II are true statements but II is not correct explanation of I

3. ✘ I is true but II is false

4. ✘ Both I and II are false

**Question Number : 67 Question Id : 5942534474 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Assertion: During confocal microscopy it is necessary to examine cells in vacuum.

Reason: Light travels fast in Vacuum

**Options :**

1. ✘ Assertion and Reason are true statements and reason is correct explanation of assertion
2. ✘ Assertion and Reason are true statements but reason is not correct explanation of assertion
3. ✘ Assertion is true but reason is false
4. ✔ Both Assertion and Reason are false

**Question Number : 68 Question Id : 5942534475 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Radio Isotopes cannot be used in

**Options :**

1. ✘ Tracing metabolic pathway
2. ✘ Enzyme Ligand Binding studies
3. ✔ Treating Leukemia
4. ✘ Radio dating

**Question Number : 69 Question Id : 5942534476 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Affinity Chromatography is not suitable for

**Options :**

1. ✓ GFP tagged protein
2. ✗ GST Fusion protein
3. ✗ Metal ion affinity proteins
4. ✗ His tagged protein

**Question Number : 70 Question Id : 5942534477 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Order of bands observed in agarose gel electrophoresis from cathode to Anode post run

- A) Genomic DNA
- B) Super coiled Plasmid DNA
- C) Nicked Plasmid DNA

**Options :**

1. ✗ B, A, C
2. ✓ A, C, B

3. ✘ B, C, A

4. ✘ A, B, C

**Question Number : 71 Question Id : 5942534478 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which is NOT an ion exchanger

**Options :**

1. ✘ Quaternary ammonium-cellulose

2. ✘ SP- Sephadex

3. ✘ CM-Cellulose

4. ✔ Sephadex G-200

**Question Number : 72 Question Id : 5942534479 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Protein structure can be studied by

A) NMR

B) X-Ray Crystallography

C) CD Spectroscopy

**Options :**

1. ✘ A and B only
2. ✘ B and C only
3. ✘ A and C only
4. ✔ A, B and C

**Question Number : 73 Question Id : 5942534480 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which of the following technique separates proteins based on their pI value?

**Options :**

1. ✘ Agarose gel electrophoresis
2. ✔ Iso Electric Focusing
3. ✘ Microchip electrophoresis
4. ✘ Capillary electrophoresis

**Question Number : 74 Question Id : 5942534481 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Match the following techniques and their prime characteristic

- |                                   |                        |
|-----------------------------------|------------------------|
| A) Nuclear magnetic resonance     | i. Absorption of Light |
| B) Circular Dichroism             | ii. Magnetic moments   |
| C) Atomic absorption Spectroscopy | iii. Polarize light    |

**Options :**

1. ✘ A-i, B-iii, C-ii

2. ✘ A-iii, B-i, C-ii

3. ✘ A-i, B-ii, C-iii

4. ✔ A-ii, B-iii, C-i

**Question Number : 75 Question Id : 5942534482 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Assertion : Isotachopheresis is a form of electrophoresis where charged analytes are separated based on ionic mobility factor

Reason : Ionic mobility factor differs based on fluorescence of proteins;

**Options :**

1. ✘ Assertion and Reason are true statements and reason is correct explanation of assertion

2. ✘

Assertion and Reason are true statements but reason is not correct explanation of assertion

3. ✓ Assertion is true but reason is false

4. ✗ Both Assertion and Reason are false

**Question Number : 76 Question Id : 5942534483 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Proteins sequences are homologous if they are evolved from common ancestors. Which of the following statements are true:

- A) Orthologs have similar biological function
- B) Paralogs have similar biological function
- C) Orthologs have different biological function
- D) Paralogs have different biological function

**Options :**

1. ✗ A and B only

2. ✓ A and D only

3. ✗ C and D only

4. ✗ B and C only

**Question Number : 77 Question Id : 5942534484 Question Type : MCQ Option Shuffling : Yes Is**



**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Substitution score matrices allow detection of:

**Options :**

1. ✓ Evolutionary relationships
2. ✗ Isozymes
3. ✗ Enzyme binding sites
4. ✗ Protein structure

**Question Number : 78 Question Id : 5942534485 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Blastx program accepts following query sequences:

**Options :**

1. ✗ Protein
2. ✗ Both protein and nucleic acid
3. ✓ Nucleic acids (translated)
4. ✗ Neither protein nor nucleic acid

**Question Number : 79 Question Id : 5942534486 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Predicting the evolutionary relationship in proteins is best queried by:

**Options :**

1. ✘ Protein sequence data bases
2. ✔ Protein structure data bases
3. ✘ DNA data bases
4. ✘ mRNA data bases

**Question Number : 80 Question Id : 5942534487 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Yeast two hybrid system is useful in predicting:

**Options :**

1. ✘ Protein - DNA interactions
2. ✔ Protein - protein interactions

3. ✘ Proteome of an organism

4. ✘ Transcriptome of an organism

**Question Number : 81 Question Id : 5942534488 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which of the following amino acid in primary sequence breaks Alpha helix:

**Options :**

1. ✘ Glycine

2. ✔ Proline

3. ✘ Lysine

4. ✘ Alanine

**Question Number : 82 Question Id : 5942534489 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Arrange the following events of “down stream of radiation induced DNA damage”

- A) Expression of p21
- B) Inactivation of G1/S-cdk
- C) p53 phosphorylation
- D) p53 dephosphorylation

**Options :**

1. ✘ A, B, C

2. ✘ D, A, B

3. ✘ A, B, D

4. ✔ C, A, B

**Question Number : 83 Question Id : 5942534490 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Arrange the following events in order seen from G1 to M phase

- A) Active G1/cdk
- B) Inactivation of Rb protein
- C) Activation of E2F protein
- D) Synthesis of Cyclin A

**Options :**

1. ✔ A, B, C, D

2. ✘ B, C, D, A

3. ✘ C, D, A, B

4. ✘ D, A, B, C

Question Number : 84 Question Id : 5942534491 Question Type : MCQ Option Shuffling : Yes Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Cell cycle phases can be estimated by following technique

Options :

1. ✘ Capillary electrophoresis

2. ✔ Flow cytometry

3. ✘ Confocal microscopy

4. ✘ Electron microscopy

Question Number : 85 Question Id : 5942534492 Question Type : MCQ Option Shuffling : Yes Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Arrange the following commonly used paper chromatography solvents according to their polarity index (p) (from high polarity index to low polarity index):

A) Methanol

B) Water

C) N-Hexane

D) Toluene

Options :

1. ✘ C, A, D, B

2. ✘ B, D, C, A

3. ✘ B, A, C, D

4. ✔ B, A, D, C

**Question Number : 86 Question Id : 5942534493 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

One curie is equivalent to how many becquerels (Bq)

**Options :**

1. ✘ 3.7 GBq

2. ✔ 37 GBq

3. ✘ 37 MBq

4. ✘ 37 KBq

**Question Number : 87 Question Id : 5942534494 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Arrange the following events starting from activation of receptor on cell surface:

- A) Activation of PKB
- B) Activation of PI3-kinase
- C) Activation of PDK1
- D) Activation of BAD

**Options :**

- 1. ✓ B, C, A, D
- 2. ✗ B, A, C, D
- 3. ✗ A, B, C, D
- 4. ✗ A, B, D, C

**Question Number : 88 Question Id : 5942534495 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which of the following domains play important role in protein-protein interactions?

- A) PH domains
- B) SH2 domains
- C) SH3 domains

**Options :**

- 1. ✗ A and B only
- 2. ✓ B and C only
- 3. ✗ A and C only

4. ✘ A, B and C

**Question Number : 89 Question Id : 5942534496 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which of the following statements are true?

- A) Protein phosphorylation is an important event in signal transduction
- B) Protein phosphorylation always leads to activation of the target protein
- C) Some signaling receptors possess protein serine or tyrosine kinase activities

**Options :**

1. ✘ A and B only

2. ✘ B and C only

3. ✔ A and C only

4. ✘ A, B and C

**Question Number : 90 Question Id : 5942534497 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**



Which of the following statements are true with reference to cyclic nucleotides in signal transduction?

- A) Binds reversibly to proteins
- B) Diffuse freely in cytoplasm
- C) Made by cyclase's
- D) Broken by phosphatases

**Options :**

1. ✓ A, B, C only

2. ✗ B, C, D only

3. ✗ A, B, D only

4. ✗ A, C, D only

**Question Number : 91 Question Id : 5942534498 Question Type : MCQ Option Shuffling : Yes Is**

**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

**Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Both Pertussis toxin and cholera toxin interact with G alpha protein. Which of the following statements are true in the context?

- A) Cholera toxin associates with Gs alpha subunit
- B) Cholera toxin associates with Gi alpha subunit
- C) Pertussis toxin associates with Gs alpha subunit
- D) Pertussis toxin associates with Gi alpha subunit

**Options :**

1. ✗ A and C only

2. ✗ B and C only

3. ✓ A and D only

4. ✗ B and D only

**Question Number : 92 Question Id : 5942534499 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Which one of the following statements are true with reference to G proteins?

- A) All G proteins are trimeric
- B) G proteins are active in GTP bound form
- C) GTPase activating protein activates G proteins
- D) Active state of G proteins depends on helper proteins

**Options :**

1. ✗ A and B only

2. ✗ B and C only

3. ✓ B and D only

4. ✗ A and D only

**Question Number : 93 Question Id : 5942534500 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Match the following events in Group I with Group II associated with receptor mediated signal transduction:

Group I	Group II
A) PKC	i. PIP3
B) PLC gamma	ii. Ca <sup>2+</sup>
C) PI3-kinase	iii. IP3
D) PKA	iv. cAMP

**Options :**

1. ✘ A-ii, B-i, C-iii, D-iv

2. ✘ A-iv, B-iii, C-i, D-ii

3. ✘ A-iii, B-i, C-ii, D-iv

4. ✔ A-ii, B-iii, C-i, D-iv

**Question Number : 94 Question Id : 5942534501 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

The sequence of signaling events in MAPK activation include:

**Options :**

1. ✘ Raf, Ras, ERK and MEK

2. ✘ Ras, ERK, MEK and Raf

3. ✔ Ras, Raf, MEK and ERK

4. ✘ ERK, MEK, Ras and Raf

**Question Number : 95 Question Id : 5942534502 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Oncoproteins and tumour suppressor proteins are important in cancer development. Which one of the following statement describes most precisely the mechanism of p53-dependent cell cycle arrest?

**Options :**

1. ✘ p53 stimulates the expression of p21
2. ✘ p53 stimulates the expression of checkpoint kinase 1 and 2
3. ✘ p53 stimulates the expression of the Cdc25 inhibitor p21
4. ✔ p53 stimulates the expression of the CDK inhibitor p21

**Question Number : 96 Question Id : 5942534503 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

The major driving force in molecules movement in capillary electrophoresis is:

**Options :**

1. ✘ Charge

2. ✘ Size

3. ✔ Endosmosis

4. ✘ pH

**Question Number : 97 Question Id : 5942534504 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

ATP net yield for Complete oxidation of Palmitate.

**Options :**

1. ✘ 180

2. ✘ 102

3. ✔ 106

4. ✘ 108

**Question Number : 98 Question Id : 5942534505 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

The following technique is used in proposing bidirectional DNA synthesis

**Options :**

1. ✘ Density gradient centrifugation
2. ✔ Autoradiography
3. ✘ Mass spectrometry
4. ✘ Electrophoresis

**Question Number : 99 Question Id : 5942534506 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.25**

Match the transporter mechanism and molecules transported:

- |                               |                            |
|-------------------------------|----------------------------|
| A) Diffusion                  | i. Hydrophobic molecules   |
| B) Primary active transport   | ii. Na/glucose transporter |
| C) Bulk transport             | iii. Na/K ATPase           |
| D) Secondary active transport | iv. Phagocytosis           |

**Options :**

1. ✘ A-ii, B-iii, C-i, D-iv
2. ✘ A-iii, B-ii, C-i, D-iv
3. ✔ A-i, B-iii, C-iv, D-ii
4. ✘ A-iv, B-ii, C-iii, D-i

Question Number : 100 Question Id : 5942534507 Question Type : MCQ Option Shuffling : Yes

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.25

Photomultiplier tubes used in the following instrument:

- A) Spectrophotometer
- B) Liquid scintillation counter
- C) Flow cytometer

Options :

1. ✘ A and B only

2. ✘ B and C only

3. ✘ A and C only

4. ✔ A, B and C