A synthetic mRNA of repeating sequence 5'-CACACACACACACACACAC... is used for a cell-free protein synthesizing system like the one used by Nirenberg. If we assume that protein synthesis can begin without the need for an initiator codon, what product or products would you expect to occur after protein synthesis?

A. one protein, consisting of a single amino acid

B. three proteins, each consisting of a different, single amino acid

C. two proteins, each with an alternating sequence of two different amino acids

D. one protein, with an alternating sequence of three different amino acids

E. one protein, with an alternating sequence of two different amino acids

*The A, P, and E sites are progressively occupied by amino acids being assembled into a polypeptide. These sites are part of

A. DNA.
B. the large ribosomal subunit.
C. mRNA.
D. tRNA.
E. the spliceosome.

B. the large ribosomal subuni ✓

Like Comment

★ 🔊

Bacteria can transcribe and translate human genes to produce function human proteins because why?

The genetic code is nearly universal.

What change occurs in chromosome structure between G1 and G2 phases of interphase?

A. By G2, they have become more tightly condensed.
B. They begin to be more actively transcribed in G2 than G1
C. Chromosomes in G2 contain two linear pieces of DNA while those in G1 have only one.
D. Chromosomes in G2 have a centromere which was not present in G1.

C. Chromosomes in G2 contain two linear pieces of DNA while those in G1 have only one.

The restriction endonuclease is having a defense mechanism in bacterial system against foreign DNA such as able to protect its own DNA?

Select one:

a. By methylation of bacterial DNA by restriction enzyme

b. By methylation of foreign DNA by restriction enzyme

c. By phosphorylation of bacterial DNA by restriction enzyme

d. By phosphorylation of foreign DNA by restriction enzyme

e. By glycosylation of foreign DNA by restriction enzyme

to search

Which of the following is not correct regarding DNA structure?

Select one:

- a. DNA is a right-handed antiparallel double-stranded helix
- b. The two strands are helically coiled
- c. The structure of DNA maximizes the exposure of the negatively charged phosphate backbone to
- d. The hydrophobic bases in the middle is shielded from water
- e. DNA makes a complete turn every 3.4 nm with a diameter of about 20 nm

Which of the following is a description of chromatin?

Select one

- a. All the genetic sequences contained by members of a particular species
- b. The DNA-protein complex which comprises eukaryotic chromosomes
- c. Repetitive sequences contained within the genome of an organism
- d. The protein coding sequences and their regulatory elements
- e. All the nucleus content of a cell

re to search

Which of the following genetic tests best matches its characteristic?

Select one:

- a. Measuring phenylalanine in urine (phenylketonuria) is a direct molecular testing.
- b. Fluorescent in situ hybridization (FISH) is used to detect abnormal number of chromosomes.
- c. Karyotyping is used to detect the sequence of a mutated gene.
- d. Western blot is used to measure mRNA level in a tissue.
- e. Restriction fragment length polymorphism is dependent on creation or deletion of a restriction si

What type of PCR quantifies the rate at which new DNA is synthesized?

Select one:

- a. Multiplex
- b. Allele Specific
- c. Real Time
- d. Qualitative
- e. Conventional PCR

Gene expression is highly regulated process because it is responsible of?

ere to search

As regard type I restriction enzymes, all the following statements are true except?

Select one:

- a. It is formed of 3 different subunits
- b. Endonuclease and methylase activity are separated
- c. ATP, Mg+2and S- adenosyl methionine are required.
- d. Eco B is an example.
- e. It cuts up to 1000 bp away from the restriction site.

Gene expression is highly regulated process because it is responsible of?

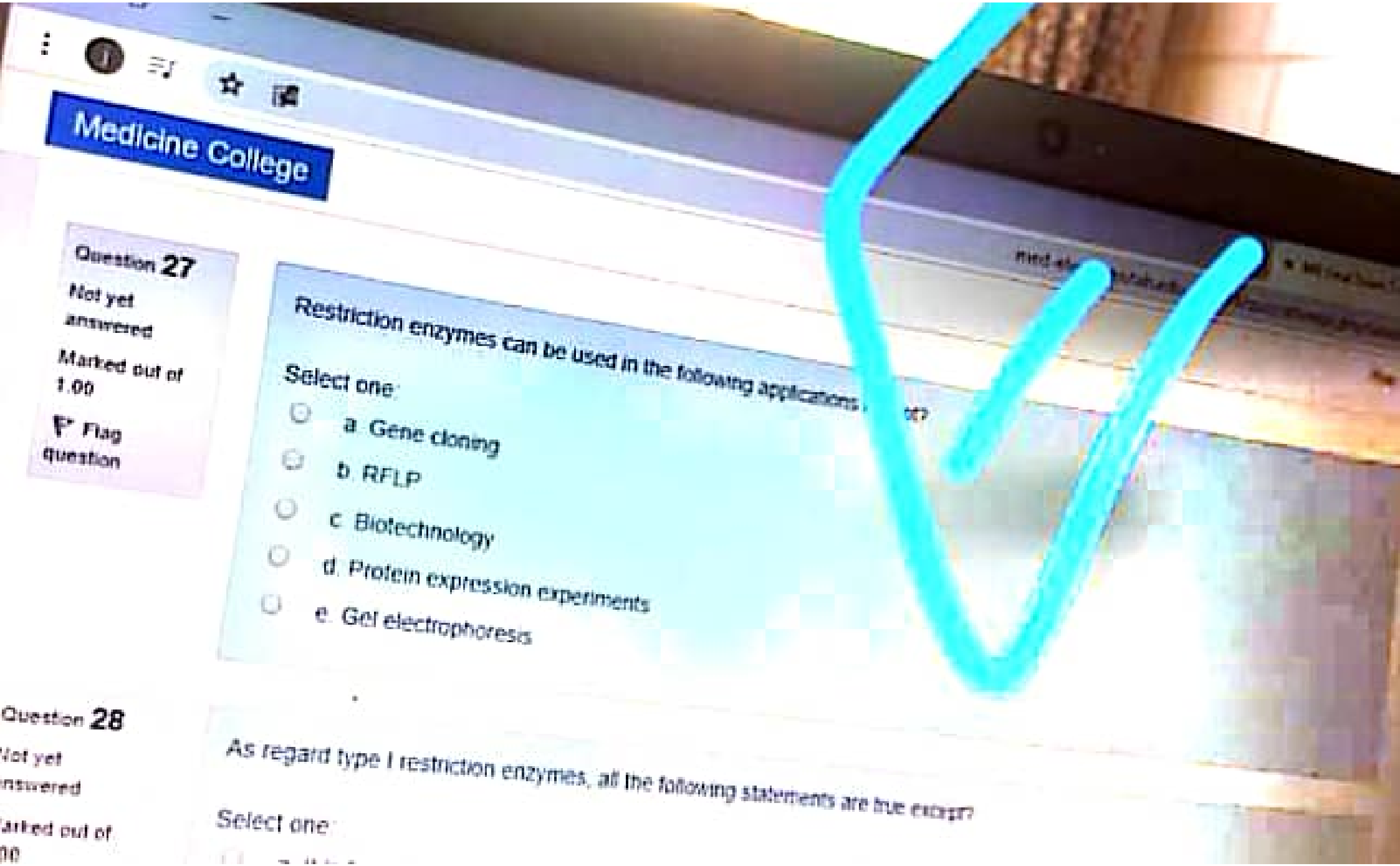
Select one:

- a. Cell communication
- b. Cell function and structure
- c. Apoptosis
- d. type of DNA damage
- e. generation of ROS

Which one of the following best describes inducible pluripotent stem cell (IPS)?

Select one:

- a. Frozen embryos are the source of these stem cells
- b. There is ethical objection to their use
- c. It means inserting sperm into an egg
- d. Genetic reprogramming converts them from adult somatic cells to embryonic stem cells
- e. The most common problem with this technique is rejection of the transplanted new cells



Question 49

Not yet answered

Marked out of 1.00

Flag question

Which of the following pathways is TRUE in cancer cells?

Select one:

- a. Hypermethylation of p53 gene promoter → high p53 protein → inhibits cell g... th.
- b. Hyperphosphorylated retinoblastoma protein → binds E2F factor efficiently ...prevents mitosis.
- c. RAS mutation → loss of GTPase activity → stimulates cell growth.
- d. Poor blood supply → induces hypoxia-inducible factor 1 → inactivates gly... ...
- e. Amplification of Myc gene → more Myc protein → inhibits cell growth.

Question 50

Not yet answered

Marked out of 1.00

Flag question

G-Protein transmembrane domain is comprised of?

Select one:

- a. 7 transmembrane helices
- b. 8 transmembrane helices
- c. 9 transmembrane helices
- d. 10 transmembrane helices
- e. 6 transmembrane helices

Medicine College

الاحياء الجزيئية/الدفعة الثانية

Question **51**

Not yet answered

Marked out of 1.00

Flag question

The C-terminal domain of cell membrane receptors which initiate the intracellular signaling cascade (Signa

Select one:

- a. Transmembrane domain
- b. Agonist ligands
- c. Intracellular domain
- d. Antagonist ligands
- e. Extracellular domain

Question **52**

Answer saved

Marked out of 1.00

Flag

The ribose in DNA is?

Select one

- a. 2-deoxy-β-D-ribose

Question 9

Not yet answered

Marked out of 1.00

Flag question

The first event in the protein synthesis in eukaryotes starting with the first amino acid (methionine) is?

Select one

- a. Association between the ribosomal subunits
- b. Base pairing between met-tRNA to AUG codon of mRNA
- c. Binding of large ribosomal subunit to AUG codon of mRNA
- d. Covalent binding between the first two amino acids
- e. Polysomes formation

Question 10

Not yet answered

Marked out of 1.00

Flag question

In which PCR phase the nucleotide triphosphates (dNTPs) are added to the growing DNA strand?

Select one

- a. Preparation
- b. Annealing
- c. Extension/elongation
- d. Denaturation/separation
- e. DNA extraction

Question 28

Not yet answered

Marked out of 1.00

Flag question

As regard type I restriction enzymes, all

Select one:

a. It is formed of 3 different subunits

b. Endonuclease and methylase ac

c. ATP, Mg+2and S- adenosyl meth

d. Eco B is an example

e. It cuts up to 1000 bp away from

Question 29

In a eukaryote, activating transcription

Type here to search

The nitrogen bases of DNA (choose the incorrect answer)?

Select one:

- a. Flat and stacked above one another
- b. Each base pair is rotated about 360 in B DNA around the axis of helix relative to the next base pair
- c. About 10 bases pairs make a complete 3600
- d. The pyrimidines are adenine (A) and guanine (G)
- e. They have basic natures

If we assume that a synthetic mRNA of repeating sequence 5'-CACACACACACACACAC... is used for protein synthesis, what product would you after protein synthesis?

Select one:

- a. One protein, consisting of a single amino acid
- b. Three proteins, each consisting of a different, single amino acid
- c. Two proteins, each with an alternating sequence of two different amino acids
- d. One protein, with an alternating sequence of three different amino acids
- e. One protein, with an alternating sequence of two different amino acids

Which of the following genetic tests best matches its characteristic?

Select one:

- a. Measuring phenylalanine in urine (phenylketonuria) is a direct molecular testing
- b. Fluorescent in situ hybridization (FISH) is used to detect abnormal number of chromosomes
- c. Karyotyping is used to detect the sequence of a mutated gene
- d. Western blot is used to measure mRNA level in a tissue
- e. Restriction fragment length polymorphism is dependent on creation or deletion of a restriction site

Question 9

Not yet answered

Marked out of 1.00

Flag question

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- c. Binding of large ribosomal subunit to AUG codon of mRNA
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Not yet answered

Marked out of 1.00

Flag question

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Select one

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- b. Annealing
- c. Extension/elongation
- d. Denaturation/separation
- e. DNA extraction

Flag question

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- c. Binding of large ribosomal subunit to AUG codon of mRNA
- d. Covalent binding between the first two amino acids
- e. Polysomes formation

Question 10

Not yet answered

Marked out of 1.00

Flag question

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Select one

- a. Preparation
- b. Annealing
- c. Extension/elongation
- d. Denaturation/separation
- e. DNA extraction

Previous page

Next page

Question 8

Not yet answered

Marked out of 1.00

Flag question

Which of the following genetic tests test matches its characteristic?

Select one:

- a. Measuring phenylalanine in urine (phenylketonuria) is a direct molecular testing
- b. Fluorescent in situ hybridization (FISH) is used to detect abnormal number of chromosomes
- c. Karyotyping is used to detect the sequence of a mutated gene
- d. Western blot is used to measure mRNA level in a tissue
- e. Restriction fragment length polymorphism is dependent on creation or deletion of a restriction site

Question 9

Not yet answered

Marked out of 1.00

Flag question

The first event in the protein synthesis in eukaryotes starting with the first amino acid (methionine) is?

Select one:

- a. Association between the ribosomal subunits
- b. Base pairing between met tRNA to AUG codon of mRNA
- c. Binding of large ribosomal subunit to AUG codon of mRNA
- d. Covalent binding between the first two amino acids
- e. Polysomes formation

Question 10

Question 6

Answer saved

Marked out of 1.00

Flag question

What is the most common problem of using adenoviral vectors in gene therapy?

Select one:

- a. Tumor formation (insertional mutagenesis)
- b. Low transfer efficiency
- c. Only infects cells of nervous system
- d. Cannot infect somatic cells
- e. Massive immunological response

Question 7

Not yet answered

Marked out of 1.00

Flag question

If we assume that a synthetic mRNA of repeating sequence 5'-CACACACACACACACAC- is used for protein synthesis, what product would you after protein synthesis?

Select one

- a. One protein, consisting of a single amino acid
- b. Three proteins, each consisting of a different, single amino acid
- c. Two proteins, each with an alternating sequence of two different amino acids
- d. One protein, with an alternating sequence of three different amino acids
- e. One protein, with an alternating sequence of two different amino acids

c. ATP, Mg^{+2} and S- adenosyl methionine are required

d. Eco B is an example

e. It cuts up to 1000 bp away from the restriction site

Question 15

Not yet answered

Marked out of 1.00

Flag question

What change occurs in chromosome structure between G1 and G2 phases of interphase?

Select one:

a. By G2, they have become more tightly condensed

b. They begin to be more actively transcribed in G2 than G1

c. Chromosomes in G2 contain two linear pieces of DNA while those in G1 have only one

d. Chromosomes in G2 have a centromere which was not present in G1

e. Chromosomes in G1 contain two linear pieces of DNA while those in G2 have only one

Previous page

Next page

Question 13

Not yet answered

Marked out of 1.00

Flag question

Double strand break is a type of ——— damage due to ——— and it is possible to be repaired in human by———?

Select one:

- a. Endogenous, exposure to UV light, NER enzymes
- b. Exogenous, exposure to X-ray, HR and NHEJ
- c. Induced, exposure to UV light, Photolyases
- d. Spontaneous, exposure to alkylating agents, BER enzymes
- e. Induced, exposure to UV light, NER enzymes

Question 14

Not yet answered

Marked out of 1.00

Flag question

As regard type I restriction enzymes, all the following statements are true except?

Select one:

- a. It is formed of 3 different subunits
- b. Endonuclease and methylase activity are separated
- c. ATP, Mg^{+2} and S- adenosyl methionine are required
- d. Eco B is an example
- e. It cuts up to 1000 bp away from the restriction site

Question 15

What change occurs in chromosome structure between G1 and G2 phases of interphase?

Which one of the following techniques is selected to measure the concentration of insulin mRNA in β-cells of pancreas?

Select one:

- a. Western blotting using antibody probe
- b. Northern blotting using DNA probe
- c. Southern blotting using DNA probe
- d. Southern blotting using antibody probe
- e. Western blotting using RNA probe

As regard the intracellular receptors, all the following statements are true except one?

Select one:

- a. The steroid and thyroid hormones are prominent ligands
- b. found in the cytoplasm or inside nucleus
- c. function in the nucleus
- d. Act as transcription factors to alter the rate of transcription of particular genes
- e. Catecholamines are major ligands for this type of receptors

c. Insertion of viral promoter region of a virus near MYC gene

d. Deletion of APC gene

e. Increase copy number of retinoblastoma gene

Question 20

Not yet answered

Marked out of 1.00

Flag question

If a bacterium can grow in a minimal medium it is called?

Select one:

a. Prototroph

b. Auxotroph

c. Broth

d. Transposons

e. Mutagenic

Previous page

Which phase the nucleotide triphosphates (dNTPs) are added to the growing DNA strand?

Select one

- a. Extension/elongation
- b. Annealing
- c. Denaturation/separation
- d. Preparation
- e. DNA extraction

All the following mutations would cause cancer EXCEPT?

Select one

- a. Point mutation of RAS which looses GTPase activity
- b. Chromosomal translocation t(8; 14)
- c. Insertion of viral promoter region of a virus near MYC gene
- d. Deletion of APC gene
- e. Increase copy number of retinoblastoma gene

Question 16

Not yet answered

Marked out of 1.00

Flag question

Which one of the following statements is TRUE about germ line gene therapy?

Select one:

- a. It results in permanent changes that are passed down to subsequent generations
- b. It is permissible (allowed) in humans
- c. It includes transfer of genes to somatic cells
- d. Its effect is restricted to the actual patient and is not passed on to his or her children
- e. It means that the therapeutic gene is transferred to bone marrow cells of the patient's body

Question 17

Not yet answered

Marked out of 1.00

Flag question

Which description fits the term DNA fingerprint?

Select one:

- a. DNA profile is the same for all unrelated individuals
- b. DNA profiling uses repetitive sequences that are highly variable, called variable number of tandem repeats
- c. The probability of having two people with the same DNA fingerprint is very high
- d. It identifies differences in patterns of coding genes between individuals
- e. 100% of the child's bands of his DNA profile come from his father

Question 18

Which of the following pathways is TRUE in cancer cells?

Select one:

- a. Hypermethylation of p53 gene promoter → high p53 protein → inhibits cell growth.
- b. Hyperphosphorylated retinoblastoma protein → binds E2F factor efficiently → prevents mitosis.
- c. RAS mutation → loss of GTPase activity → stimulates cell growth.
- d. Poor blood supply → induces hypoxia-inducible factor 1 → inactivates glycolytic enzymes.
- e. Amplification of Myc gene → more Myc protein → inhibits cell growth.

G-Protein transmembrane domain is comprised of?

Select one:

- a. 7 transmembrane helices
- b. 8 transmembrane helices
- c. 9 transmembrane helices
- d. 10 transmembrane helices
- e. 6 transmembrane helices

All of the followings are DNA regulatory regions except

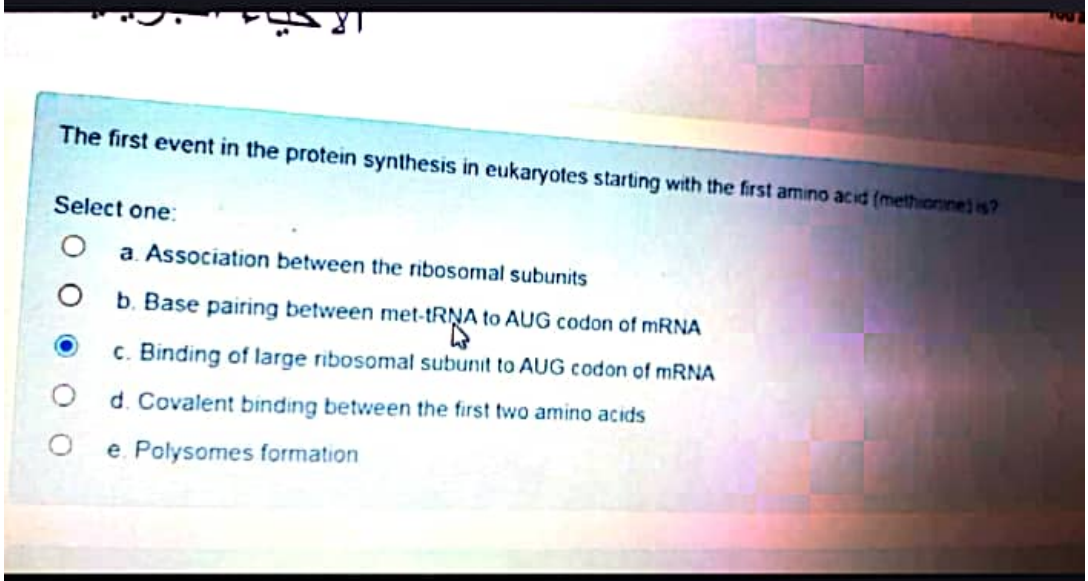
Select one:

- a. Enhancers
- b. Silencers
- c. Repressors
- d. Operators
- e. Promoters

فاينل موليكيولار (كورونا) جلسة ١

Jun 6, 2020 ·

B



1 3 comments

Like Comment

Balqees Jboul ► فاينل موليكيولار (كورونا) جلسة ١

Jun 6, 2020 ·

#ارشيف
#انرفع_حظر_كورونا_اليوم🙏😂

Sura Hamad Aldaraba and 4 others 2 comments

Respond

Bacteria can transcribe and translate human genes to produce functional human proteins because?

Select one:

- a. the genetic code is universal
- b. bacterial ribosomes and eukaryotic ribosomes are identical
- c. eukaryotes do not really need a nucleus
- d. RNA has catalytic properties
- e. bacterial and eukaryotic RNA polymerases are identical

Which of the following characters is TRUE as regards progenitor cells?

Select one:

- a. They can divide and further differentiate.
- b. They are classified as totipotent stem cells.
- c. They can replicate indefinitely.
- d. Progenitor cells have no function in adult human.
- e. Most progenitor cells are described as pluripotent.

Question 58

Answer saved

Marked out of 1.00

Remove flag

Which of the following is CORRECT as regards carcinogenesis?

Select one:

- a. Human cancers are never affected by environmental factors.
- b. Adenoviruses posses reverse transcriptase, which copies RNA to DNA.
- c. Chemical carcinogens interact covalently with DNA.
- d. RNA viruses are not known to be carcinogens.
- e. Indirect carcinogens react directly with DNA.

Question 59

The Zinc Finger Motif, choose the wrong statement?

Select one:

- a. The zinc in zinc finger binds to a specific sequence of bases in the major groove of DNA
- b. Each zinc finger contacts about 5 bp of DNA
- c. Eukaryotic transcription factors generally have two to six zinc finger motifs
- d. The nucleotide recognition signal is contained within the α-helix and not the β sheets
- e. Commonly found in the DNA binding domain of some hormone receptors

What is the possible target for anti-cancer therapy?

Select one:

- a. Activators of glycolysis
- b. Activators of telomerase
- c. Activators of proto-oncogenes
- d. Activators of stem cell differentiation
- e. Activators of methylases of tumor suppressor genes

Which of the following proteins increases in hepatocelluar carcinoma (HCC)?

Select one:

- a. Alpha-fetoprotein.
- b. p53.
- c. Retinoblastoma.
- d. APC.
- e. Prostatic-specific antigen.

Question 48

Answer saved

Marked out of 1.00

Flag question

When target cell respond to plasma membrane bound molecules on signalling cells, this is called?

Select one:

- a. Signal transduction
- b. Cell signalling

Marked out of 1.00

Flag question

Which of the following genetic tests correctly matches its purpose?

Select one:

- a. Amniocentesis → to identify genetic diseases in all pregnant women.
- b. Karyotyping → to measure RNA expression.
- c. DNA sequencing → to examine number of chromosomes.
- d. Fluorescent in situ hybridization (FISH) → to detect HER-2/neu gene amplification.
- e. Northern blot → to identify the molecular weight of a protein.

Question 43

Answer saved

Marked out of 1.00

Flag question

Which of the following enzymes catalyzes the splitting of PIP2 into 2 moles of IP3 and diacylglycerol in cell signaling?

Select one:

- a. Phosphokinase C
- b. Phospholipase C
- c. Lipokinase
- d. Phosphodiesterase C
- e. Protein kinase A

Question 18

Answer saved

Marked out of 1.00

Flag question

Signal molecule fits the binding site on its complementary receptor called as?

Select one:

- a. Specificity
- b. Amplification

51. Which of the following is true of histones?

A. The amino acid sequences of histone proteins are very similar in different organisms

B. All histones from part of the nucleosome core particles in chromatin

C. Histones are widely found in prokaryotes

D. Histones are acidic proteins

E. Histones are found in animal chromatin but in not in plant cells

e. Northern blot --- to identify the molecular weight of a protein.

Question 53

Not yet answered

Marked out of 1.00

Flag question

In DNA extraction process, the following reagent is used to sequester Ca+2 and Mg+2 ions?

Select one:

- a. Proteinase K
- b. EDTA
- c. SDS
- d. Guanidinium chloride
- e. Sodium acetate

Question 54

Not yet answered

Marked out of 1.00

Flag question

Which of the following is a nuclear receptor protein?

Select one:

- a. Steroid receptor
- b. Adhesion receptor
- c. Serpentine receptor
- d. Receptor with no intrinsic enzyme activity

الاحياء الجزيئية/الدفعة الاولى

Question 31
Not yet answered
Marked out of 1.00
Flag question

Bacteria can transcribe and translate human genes to produce functional human proteins because?

Select one:

- a. the genetic code is universal
- b. bacterial ribosomes and eukaryotic ribosomes are identical
- c. eukaryotes do not really need a nucleus
- d. RNA has catalytic properties
- e. bacterial and eukaryotic RNA polymerases are identical

Question 32
Not yet answered
Marked out of 1.00
Flag question

The A and P sites are progressively occupied by amino acids being assembled into a chain in protein synthesis. These sites are part of?

Select one:

- a. tRNA
- b. mRNA
- c. The whole ribosome
- d. Small ribosomal subunit

Answer saved

Marked out of 1.00

Flag question

Which one of the following statements about Morula is TRUE?

Select one:

- a. It is classified as unipotent stem cell.
- b. It cannot differentiate to any specialized cell.
- c. It can produce only cells of a closely related family.
- d. It undergoes limited number of divisions.
- e. It can construct a complete viable organism.

Question 8

Answer saved

Marked out of 1.00

Flag question

The information which is represented by a signal is detected by specific receptors and converted to a cellular response; this conversion is called?

Answer saved

Marked out of 1.00

Flag question

The information which is represented by a signal is detected by specific receptors and converted to a cellular response; this conversion is called?

Select one:

- a. Signal amplification
- b. Signal transversion
- c. Signal transduction
- d. Signal integration
- e. Signal transportation

Question 9

Answer saved

Marked out of 1.00

Flag question

Question 15

Answer saved

Marked out of 1.00

Flag question

If the A260/A280 ratio of DNA sample was 1.65 then the corresponding sample is?

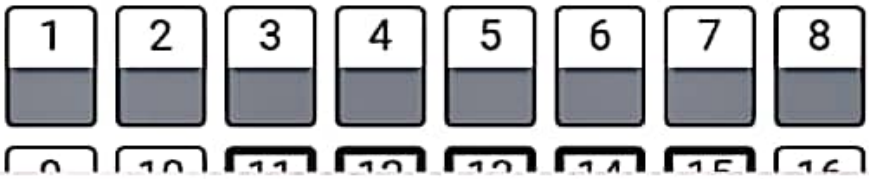
Select one:

- a. contaminated with proteins
- b. highly pure sample
- c. containing excessive amounts of ssDNA
- d. possible to be used immediately for other applications like sequencing
- e. contaminated with lipids

Previous page

Next page

QUIZ NAVIGATION



The figure shown illustrates a DNA fingerprinting analysis to examine paternity and maternity of a child. Which of the following is CORRECT?

Select one:

- a. The child is adopted (false maternity and paternity).
- b. False maternity (i.e., baby switched in the nursery).
- c. Correct maternity and paternity.
- d. The supposed (alleged) father is not the child's natural father.
- e. Data are not sufficient to detect the biological father.

فاينل موليكيولار (كورونا) جلسة ١

١(كورونا) جلسة

Jun 6, 2020 ·

اراشيف ميد مكرر
آخر صفحتين من نوت جهاد
سميح أرشيف

Like Comment

Balqees Jboul ► فاينل موليكيولار ١(كورونا) جلسة

Jun 6, 2020 ·

كمان هاد حسيتهم كلهم غلط 💔♀️🧍

الاحياء الجزيئية/الد

Which of the following characteristics is TRUE as regards vectors used in gene therapy?

Select one:

- a. Liposomes have the highest transfer efficiency.
- b. Adenovirus genome is integrated into human genome thus, could cause cancer.
- c. Retrovirus has integrase enzyme that integrates its own DNA into host genome.
- d. Herpes simplex viral vectors could deliver therapeutic genes to all cells except neurons.
- e. Liposomes are more expensive than viral vectors

إيناس نوفان ابو ارقيق 5 comments

If we assume that a synthetic mRNA of repeating sequence 5'-CACACACACACACACAC... is used for protein synthesis, what product would you after protein synthesis?

Select one:

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- b. Three proteins, each consisting of a different single amino acid
- c. Two proteins each with an alternating sequence of two different amino acids
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- e. One protein, with an alternating sequence of two different amino acids

...complement of thymine?

فاينل موليكيولار (كورونا) جلسة ١

Jun 6, 2020 ·

Palindromic
GCAACG

ولا شو
لاب د.هبه

5

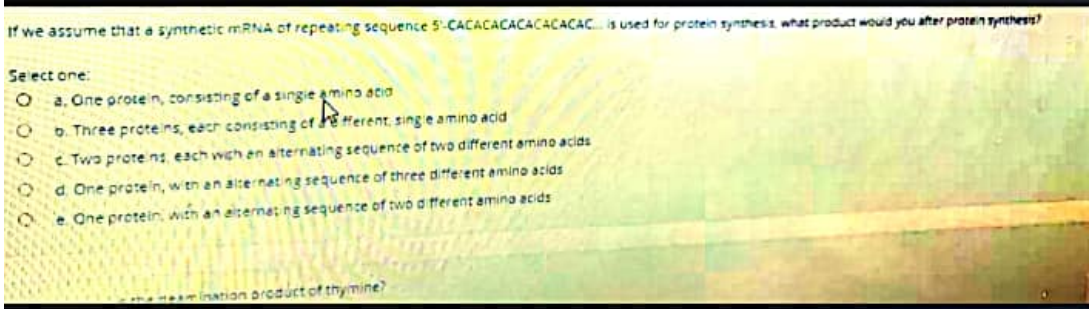
6 comments

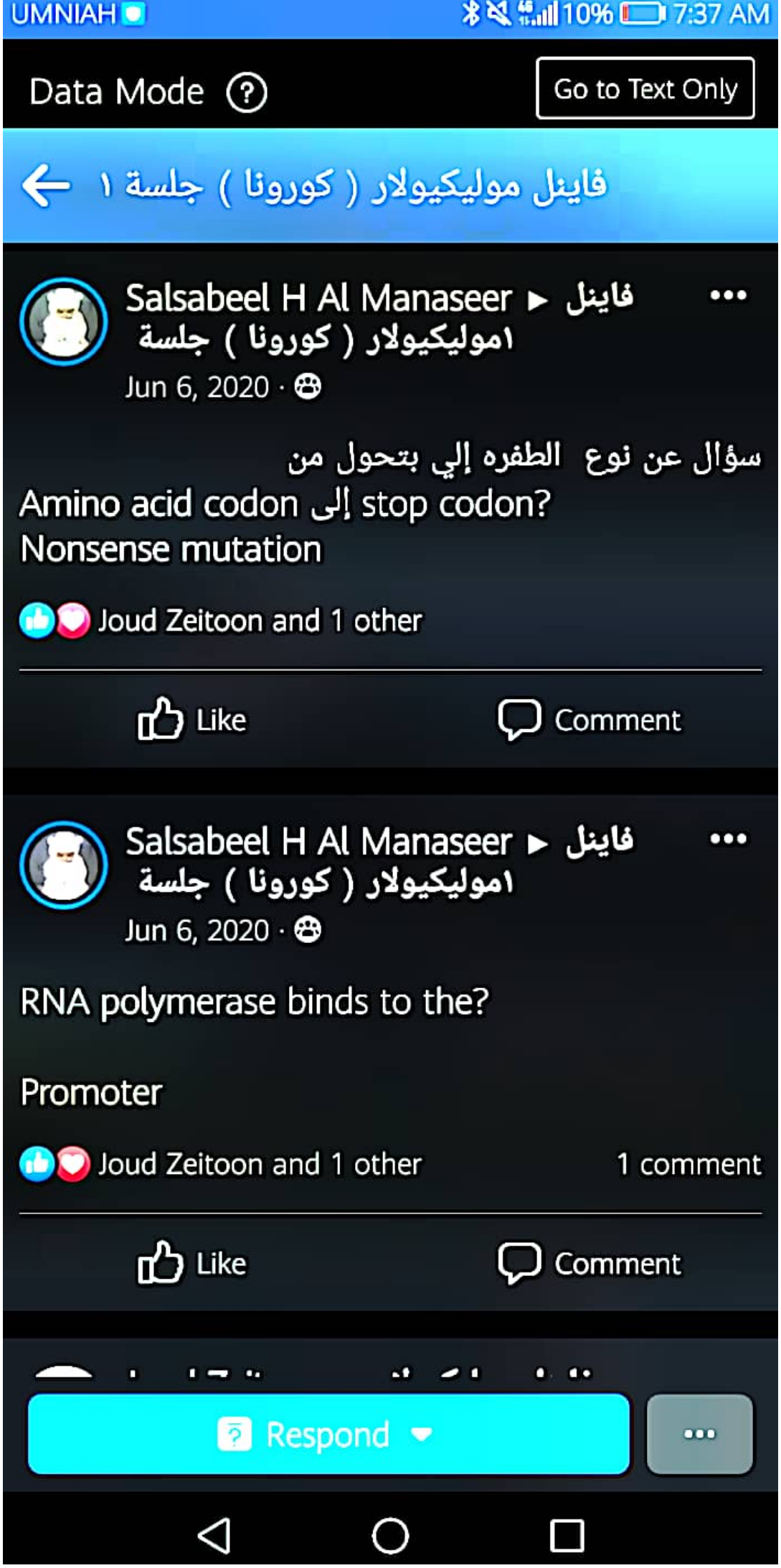
Like Comment

Ibrahim Aljunaidi ► فاينل موليكيولار (كورونا) جلسة ١

Jun 6, 2020 ·

في هاد السؤال ، بخربط شوي ، السؤال حاكي لنفرض انه كله a و c وانه يترجم بس مو حاطط ال aug
انا جاوبته e ، بس مش عارف لازم نحسب ال methionine كمان ولا لا





Which one of the following repair systems is used to specifically correct the errors which escaped the proofreading activity of DNA polymerase?

Select one

a. MMR enzymes

b. NER enzymes

c. NHEJ repair mechanism

d. Direct repair system

e. Homologous recombination system

Which of the following pathways is TRUE in cancer cells?

Select one:

- a. Deletion of p53 → perfect DNA repair → inhibited cell growth.
- b. Hyperphosphorylated retinoblastoma protein → binds E2F factor efficiently → prevent mitosis.
- c. RAS mutation → loss of GTPase activity → prevents cell growth.
- d. Poor blood supply → induces hypoxia-inducible factor 1 → inactivates glycolytic enzymes.
- e. Myc protein → generates more pyruvate kinase (PK-M2) isoenzyme) → generates more PK-M2 isoenzyme.

The first event in the protein synthesis in eukaryotes starting with the first amino acid (methionine) is?

Select one:

- a. Association between the ribosomal subunits
- b. Base pairing between met-tRNA to AUG codon of mRNA
- c. Binding of large ribosomal subunit to AUG codon of mRNA
- d. Covalent binding between the first two amino acids
- e. Polysomes formation

What is the possible target for anti-cancer therapy?

Select one:

- a. Activators of glycolysis.
- b. Activators of telomerase.
- c. Activators of proto-oncogenes.
- d. Activators of stem cell differentiation.
- e. Activators of methylases of tumor suppressor genes.

Which one of the following statements about Morula is TRUE?

Select one:

- a. It is classified as unipotent stem cell
- b. It cannot differentiate to any specialized cell
- c. It can produce only cells of a closely related family
- d. It undergoes limited number of divisions
- e. It can construct a complete viable organism

If the A260/A280 ratio of DNA sample was 1.85 then the corresponding sample?

Select one:

- a. is contaminated with proteins
- b. is highly pure sample
- c. is containing excessive amounts of ssDNA
- d. cannot be used immediately for other applications like sequencing
- e. is contaminated with lipids

Which of the following proteins increases in hepatocellular carcinoma (HCC)?

Select one:

- a. Alpha-fetoprotein
- b. p53
- c. Retinoblastoma
- d. APC
- e. Prostatic-specific antigen

Question **10**

Not yet answered

Marked out of 1.00

Remove flag

What would happen in an in vitro DNA synthesis mixture containing the four deoxynucleoside triphosphates (dNTPs) and no di-deoxynucleoside triphosphates (ddNTPs)?

Select one:

- a. No new phosphodester bonds would be formed
- b. All the products would be three nucleotides longer than the primer
- c. All the products would have the same size as the template strand
- d. All the products would be one nucleotide longer than the primer
- e. Half of the products would be two nucleotides longer than the primer

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Question 26

Not yet answered

Marked out of 1.00

Flag question

an addition or deletion of a base or bases but does not occur in a multiple of three is known as?

Select one:

a. Silent mutation

b. Conservative mutation

c. Frameshift mutation

d. Transition or transversion mutation

e. Nonsense mutation

Question 27

Not yet answered

Calculate the purity of DNA sample given that the absorbance of the sample at 260nm was 2.5 and at 280nm

Select one:

Calculate the purity of DNA sample given that the absorbance of the sample at 260nm was 2.5 and at 280nm was 1.25?

Select one:

- a. 5.0
- b. 1.6
- c. 2.0
- d. 0.5
- e. 0.6

What would happen in vitro DNA synthesis mixture containing the four deoxynucleoside triphosphates (dNTPs) and no di-deoxynucleotide triphosphates (ddNTPs)?

Select one:

- a. No new phosphodiester bonds would be formed.
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- c. All the products would have the same size as the template strand.
- d. All the products would be one nucleotide longer than the primer.
- e. Half of the products would be two nucleotides longer than the primer.

All of the followings are DNA regulatory regions except?

Select one:

- a. Enhancers
- b. Silencers
- c. Repressors
- d. Operators
- e. Promoters

Which of the following is CORRECT as regards carcinogenesis?

Select one:

- a. Human cancers are never affected by environmental factors.
- b. Adenoviruses posses reverse transcriptase, which copies RNA to DNA.
- c. Chemical carcinogens interact covalently with DNA.
- d. RNA viruses are not known to be carcinogens.
- e. Indirect carcinogens react directly with DNA.

Mitochondrial DNA (mtDNA), choose the wrong statement?

Select one:

- a. The mtDNA contains 37 genes
- b. Mutations in mtDNA increase the production of reactive oxygen species
- c. mtDNA mutations contribute to the progression of Parkinson's and Alzheimer's disease
- d. mtDNA analysis is used to trace the migration of people
- e. Normally shuffling of genes in mtDNA is associated with mutation which is the cause of many diseases including

Which of the following characters is TRUE as regards progenitor cells?

Select one:

a. They can divide and further differentiate.

b. They are classified as totipotent stem cells.

c. They can replicate indefinitely.

d. Progenitor cells have no function in adult human.

e. Most progenitor cells are described as pluripotent.

a

Promotor is the site of a gene where RNA polymerase joins for initiating transcription. In this site, the deletion of two nucleotide pairs has taken place. What will be the result of this?

Select one

a. Protein synthesis in unlimited quantities

b. Formation of normal protein

c. Shortening of the synthesized protein

d. Complete absence of protein

e. Formation of abnormal protein

The direct deamination product of guanine is?

Select one:

- a. Xanthine
- b. Hypoxanthine
- c. Uracil
- d. Thymine
- e. Adenine

All of the following statements about restriction endonucleases are true except?

Select one:

a. They are present in bacteria

b. They act on double stranded DNA

c. They recognize palindromic sequences

d. They always produce sticky ends

e. They are considered as molecular scissors

It is a difference in homologous DNA sequences that can be detected by the presence of fragments of different lengths after digestion of the DNA samples by restriction enzymes?

Select one:

- a. Restriction enzymes
- b. RFLP
- c. RT-PCR
- d. Molecular scissors
- e. Gel electrophoresis

Restriction enzymes are known as molecular scissors, as regard type I restriction enzymes, all the following statements are true except?

Select one

a. B is an example

b. It is formed of 3 different subunits Eca

c. ATP, Mg^{+2} and S- adenosyl methionine are required

d. Endonuclease and methylase activity are separated

e. It cuts up to 1000 bp away from the restriction site

Which of the following enzymes catalyzes the splitting of PIP2 into 2 moles of IP3 and diacylglycerol in cell signaling?

Select one

- a. Phosphokinase C
- b. Phospholipase C
- c. Lipokinase
- d. Phosphodiesterase C
- e. Protein kinase A

Which of the following proteins increases in hepatocelluar carcinoma (HCC)?

Select one:

- a. Alpha-fetoprotein.
- b. p53.
- c. Retinoblastoma
- d. APC.
- e. Prostatic-specific antigen

Restriction endonucleases can recognize?

Select one:

a. Palindromic sequences

b. Chimeric DNA

c. DNA-RNA hybrids

d. Homopolymer sequences

e. RNA primers

57

Spike protein is one of the proteins produced by novel corona virus (COVID-19). Which one of the following techniques is selected to identify this protein?

Select one

a. Western blotting using antibody probe

b. Northern blotting using RNA probe

c. Southern blotting using DNA probe

d. Southern blotting using antibody probe

e. Western blotting using RNA probe

What is the correct sequence of events in restriction fragment length polymorphism (RFLP) 1)Isolation of DNA 2)Incubation with restriction endonucleases 3)Separation by electrophoresis 4)DNA amplification by PCR?

Select one:

a. 1, 2, 3, 4

b. 4, 2, 1, 3

c. 3, 4, 1, 2

d. 1, 3, 4, 2

e. 1, 4, 2, 3

In DNA extraction process, the following reagent is used to sequester Ca+2 and Mg+2 ions?

Select one:

a. Proteinase K

b. EDTA

c. SDS

d. Guanidinium chloride

e. Sodium acetate

Signal molecule fits the binding site on its complementary receptor called as?

Select one:

a. Specificity

b. Amplification

c. Integration

d. Cooperativity

e. Adaptation

All of the followings are DNA regulatory regions except?

Select one

a. Enhancers

b. Silencers

c. Repressors

d. Operators

e. Promoters

Calculate the purity of DNA sample given that the absorbance of the sample at 260nm was 2.5 and at 280nm was 1.25?

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- a. 5.0
- b. 1.6
- c. 2.0
- d. 0.5
- e. 0.6

estion 42

A 13-year-old girl had noted a mass in her left breast. The DNA of the breast tissue was analyzed for the methylation status of promoters of some cell growth control genes. What is the most likely epigenetic defect in this patient?

Select one:

a. Hypermethylation of the promoters of BRCA1 gene

b. Hypermethylation of MYC gene promoters

c. Hypermethylation of p53 gene promoters

d. Deletion of RAS gene

e. Change in nucleotide sequence of RAS gene

Mitochondrial DNA (mtDNA), choose the wrong statement?

Select one:

- a. The mtDNA contains 37 genes
- b. Mutations in mtDNA increase the production of reactive oxygen species
- c. mtDNA mutations contribute to the progression of Parkinson's and Alzheimer's disease
- d. mtDNA analysis is used to trace the migration of people
- e. Normally shuffling of genes in mtDNA is associated with mutation which is the cause of many diseases including cancer

a replacement of proline codon with stop codon is called?

Select one:

a. Transition point mutation

b. Insertion frameshift mutation

c. Nonsense mutation

d. Silent mutation

e. Non-conservative point mutation

Which of the following characteristics is TRUE as regards vectors used in gene therapy?

Select one:

- a. Liposomes have the highest transfer efficiency.
- b. Adenovirus genome is integrated into human genome thus, could cause cancer.
- c. Retrovirus has integrase enzyme that integrates its own DNA into host genome.
- d. Herpes simplex viral vectors could deliver therapeutic genes to all cells except neurons.
- e. Liposomes are more expensive than viral vectors.

The traditional way of PCR is just qualitative, what type of PCR quantifies the rate at which new DNA is synthesized?

Select one:

a. Multiplex

b. Allele Specific

c. Real Time

d. Qualitative

e. Conventional PCR

The A and P sites are progressively occupied by amino acids being assembled into a chain in protein synthesis These sites are part of?

Select one:

a. tRNA

b. mRNA

c. The whole ribosome

d. Small ribosomal subunit

e. Large ribosomal subunit

Thymine dimer is a type of --------damage due to ------- and it is possible to be repaired in human by------?

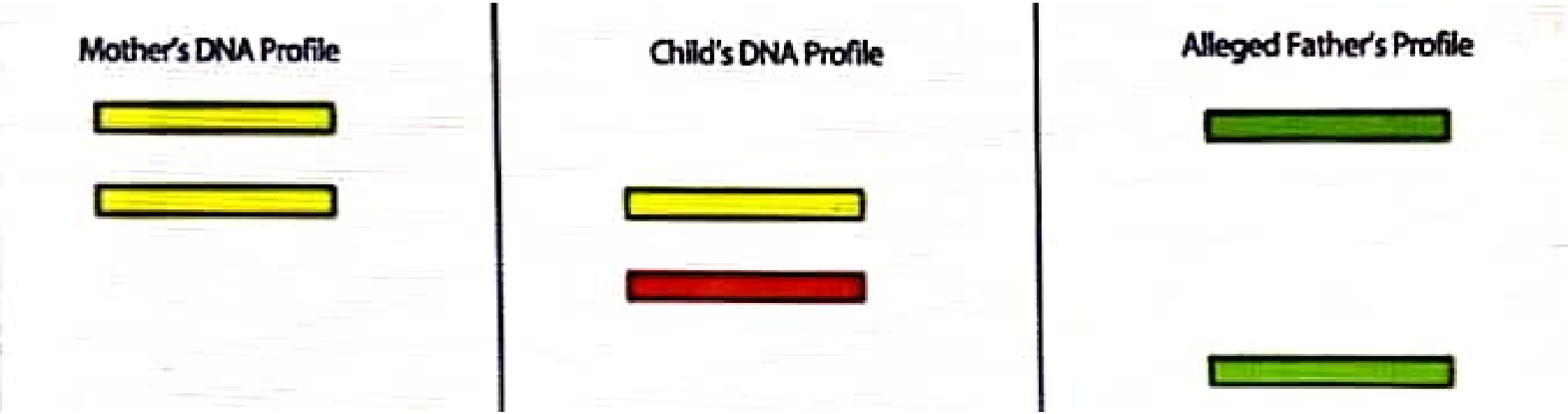
Select one:

- a. Endogenous, exposure to UV light, NER enzymes
- b. Exogenous, exposure to X-ray, BER enzymes
- c. Induced, exposure to UV light, Photolyases
- d. Spontaneous, exposure to alkylating agents, BER enzymes
- e. Induced, exposure to UV light, NER enzymes

A 4-month-old boy presented with failure to thrive (grow). He was diagnosed as cystic fibrosis following identification of a mutant CFTR gene. Liposomes carrying the corrected copy of the gene CFTR were delivered directly to his nasal epithelium. What is the type of gene therapy used for this patient?

Select one:

- a. Ex vivo somatic gene therapy.
- b. In vivo somatic gene therapy.
- c. Ex vivo germ cell therapy
- d. In vivo germ cell therapy.
- e. Genetic dedifferentiation



What is the possible target for anti-cancer therapy?

Select one:

- a. Activators of glycolysis.
- b. Activators of telomerase.
- c. Activators of proto-oncogenes.
- d. Activators of stem cell differentiation.
- e. Activators of methylases of tumor suppressor genes.

Which of the following pathways is TRUE in cancer cells?

Select one:

- a. Deletion of p53 → perfect DNA repair → inhibited cell growth.
- b. Hyperphosphorylated retinoblastoma protein → binds E2F factor efficiently → prevent mitosis.
- c. RAS mutation → loss of GTPase activity → prevents cell growth.
- d. Poor blood supply → induces hypoxia-inducible factor 1 → inactivates glycolytic enzymes.
- e. Myc protein → generates more pyruvate kinase (PK-M2)isoenzyme) → generates more PK-M2 isoenzyme.

Which one of the following best describes inducible pluripotent stem cell (iPS)?

Select one:

a. Frozen embryos are the source of these stem cells.

b. There is ethical objection to their use

c. It means inserting sperm into an egg.

d. Genetic reprogramming converts them from adult somatic cells to embryonic stem cells

e. The most common problem with this technique is rejection of the transplanted new cells

Which of the following pathways is TRUE in cancer cells?

Select one:

- a. Deletion of p53 → perfect DNA repair → inhibited cell growth.
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- c. RAS mutation → loss of GTPase activity → prevents cell growth.
- d. Poor blood supply → induces hypoxia-inducible factor 1 → inactivates glycolytic enzymes.
- e. Myc protein → generates more pyruvate kinase (PK-M2) isoenzyme) → generates more PK-M2 isoenzyme.

The first event in the protein synthesis in eukaryotes starting with the first amino acid (methionine) is?

Select one:

- a. Association between the ribosomal subunits
- b. Base pairing between met-tRNA to AUG codon of mRNA
- c. Binding of large ribosomal subunit to AUG codon of mRNA
- d. Covalent binding between the first two amino acids
- e. Polysomes formation

Question 54

Not yet answered

Marked out of 1.00

Flag question

The lac operon is highly transcribed in?

Select one:

a. presence of lactose and absence of glucose

b. presence of lactose and glucose

c. presence of glucose and absence of lactose

d. absence of lactose and glucose

e. presence of glucose only

RNA polymerase binds to the?

Select one:

- a. Enhancer
- b. Promoter
- c. Silencer
- d. Operator
- e. Shine-Dalgarno sequence

Question 59

Not yet answered

Marked out of 1.00

Flag question

One of the followings is true regarding depurination reaction?

Select one:

a. It is an induced damage that occurs in DNA by simple hydrolysis reaction

b. AP site is generated due to removal of adenine or thymine

c. This damage cannot be corrected by DNA repair system as it is irreversible

d. Depurination should be corrected after cell division so it will not be propagated throughout subsequent generations

e. It can lead to base pair deletion if it was not corrected

In a eukaryote, activating transcription factors may stimulate gene expression by an enhancer, which is characterized by?

Select one

a. Being coding sequence of DNA

b. Being located in within the gene only

c. Being located within the promotor sequence

d. Acting as enhancer or silencer

e. Being position and orientation independent

C ?

Which of the following forms of DNA repair does NOT require DNA polymerase?

Select one:

a. Direct DNA repair

b. Base excision repair

c. Nucleotide excision repair

d. Mismatch repair

e. Recombination repair

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a. Direct DNA repair

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c. Nucleotide excision repair

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