Molecular-mid

Vareed 2018

Collected by Eman Alshobaki

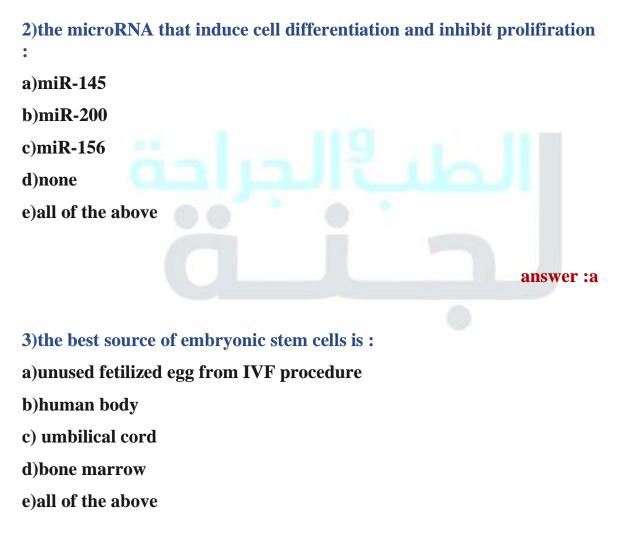


1) the enzyme cofactor that is used PCR reaction is :

a)Mg+2

- b)Ca+2
- c)Li+1
- d)Na+1
- e)Al+3

answer :a



4)the structure that does not contain DNA is:
a)telomeres
b)centromere
c) kinetochre
d)chromatin

e)origin of replication

answer:c

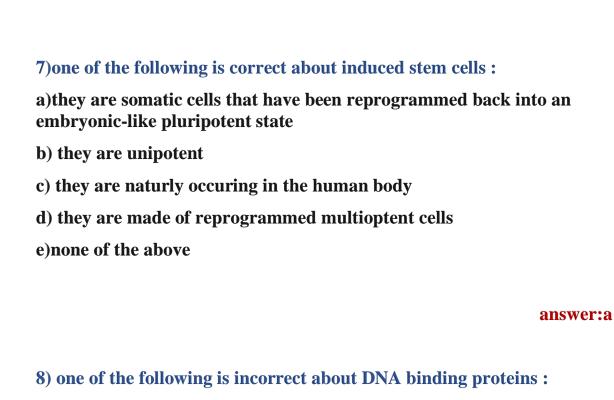
answer :b

5) the point the links a pair of sister cromatids :

- a)telomeres
- **b**)centromere
- c) kinetochre
- d)chromatin
- e)origin of replication

6)which of the following pairs of structures has the same amount of DNA :

- a)an unreplicated chromosome and a cromatid
- b) a replicated chromosome and a sister cromatid
- c) a replicated chromosome and a bivalent
- d) an unreplicated chromosome and a bivalent
- e)all of the above



- a) they bind through covalent bonds
- b)bind with the major groove of DNA
- c) DNA-binding proteins include transcription factors
- d)some of them bind to single stranded DNA

answer :a

9) one of the following is correct about helix turn helix DNA motif:

a)alpha3 and alpha2 are held at about 90degrees to each other by turn of 4 aminoacids

- b)it is not a DNA binding motif
- c)it binds to the minor groove of DNA
- d)none of the above
- e)all of the above are correct

10)dNTPs are added to the growing DNA strand during :

- a)elongation phaseb)denaturationc)annealingd)none of the above
- e)all of the above

answer:a

| 11)which type of PCR quantitates the rate at which new DNA is synthesized : |
|---|
| a) real time PCR |
| b)comventional PCR |
| answer :a |
| 12) the telomere sequence in humans : |
| a)TTAGGG |
| b)TTTAAA |
| c)AATCCC |
| d)UUAGCC |
| e)GGGTTA |
| answer :a |
| 13) which histones are associated with the linker DNA of a nucleosome: |
| a)H3 |
| b)H4 |
| c)H5 |
| d)H1 |
| e)H2A and H2B |

answer:d

14) a condition that results when one of the X chromosomes is missing or partially missing:

a)turner syndrome b)klinefelter syndrome

c)down syndrome

d)edwards syndrome

e)patau syndrome

answer:a

15) DNA ligase function in DNA replication :

a)forms phosphodiester bonds between OH3' of okazaki fragment

and phosphate 5 ' of the next lagging strand

b) adds RNA primers to the template strands

c) creates the replication fork

d) matches complementary nucleotides to the templates

answer :a

16) the enzyme that is resposible of removing RNA primers :

a)RNase

b)ligase

c)DNA primase

d) DNA polymerase

e)DNA helicase

17)one of the following is incorrect about Z DNA :
a)the major groove is narrow but very deep
b)it is left handed
c)it is a double helix
d)the diameter is 18 angstrom

answer:a

18) one of the followig is true about guanidinium chloride :

It removes water from DNA and silica

19) the holes between DNA bases, choose the wrong statement:

a)when DNA twists the distance between sugar and phosphate becomes shorter

b)the twisting of the two strands around one another forms a double helix with a minor groove

c) the twisting of the two strands around one another forms a double helix with a major groove

d)the distance beteen sugars is about double the thickness of the nitrogen bases

e)each base pair is twisted about 36 to the next base pair

answer:a

20)the name of the DNA repair system in bacteria (E.coli) in which dual incisions are made in the damaged part of the double helix :

a)nucleotide excision repair

b) base excision repair

c) mismatch repair

d)homologous recombination

e)non-homologous end joining

21) which enzyme is responsible for removing of supercoils ahead of the replication fork in DNA replication :

a)topoisomerases

- b)ligase
- c)DNA primase
- d) DNA polymerase
- e) RNase

answer:a

22) the leucine zipper motif, choose the wrong statement : a)tow helices dimerize through hydrophobic interactions to form a coiled coil

b)tow monomers associate through the antiparallel beta3 sheets to form a dimer

c)function as dimers to regulate gene transcription

d)is an a-helix made up of 30-40 amino acids

e)contains a leucine every 7 amino acids

answer:b

23) which of the following has telomeres :

- a) human chromosomes
- b)plasmid
- c)bacterial chromosome
- d)none of the above
- e)all of the above

24) which of the following does not play part in DNA stability:

a)electrostatic interactions between phosphte groups and different cations

- b)hydrophobic interactions between nitrogen bases
- c)the absence of the 3'- hydroxyl group in DNA
- d)hydrogen bonds between DNA backbone and surruonding water
- e) hydrogen bonds between purines and pyrimidines

answer:c

answer:a

25)the complex of DNA and protein found in the eukaryotic nucleus which pakages chromosomes :

a)chromatin

b)nucleotides

c)genes

d)nitrogen bases

26) with regard to their chromosomes, what is a major difference between prokaryotes an eukaryotes :

a)eukaryotes are diploid while prokaryotes are haploid

b)prokaryotes have DNA located in their cytoplasm , while all the DNA in eukaryotic cells is located inside a membrane bound nucleus

c)eukaryotes have linear chromosomes , while most prokaryotes contain a single circular chromosome

d)prokaryotes compact their DNA to a high degree while eukaryotes maintain the chromosomes in an uncompacted state

answer:c

27)which of the following would be a valuable application of a kayotype:

a)microscpic analysis could allaw identification of unusual cellular structures

b)an individual could be matched to a forensic sample based on identical karyotypes

c)a specific gene which causes a genetic disorder could be identified

d)genetic disorders caused by chromosomal rearrangements could be diagnosed

e)all of the above

answer :d

28)what change occurrs in chromosome structure between G1 and G2 phases of interphase :

a)by G2, they have becaome more tightly condensed

b)they begin to be more actively transcribed in G2 than G1

c)chromosomes in G2 contain tow linear pieces of DNA while those in G1 have only one

d) chromosomes in G2 have a centromere which was not present in G1

answer:c

29)where do the spindle fibers connect to the chromosomes :

a)to the centromere

b)to the kinetochore

c)to the centiole

d)to the centrosomes

answer :b

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