

Biology 101 final exam 023

Q1: The recycle of the cells organisms is called:

- Autophagy
- endocytosis
- exocytosis
- A & C

Answer: Autophagy

Q2:What is the nature of the SRP (Signal Recognition Particle)?

- Protein-DNA complex
- Protein-RNA complex
- Protein-lipid complex
- Protein-carbohydrate complex

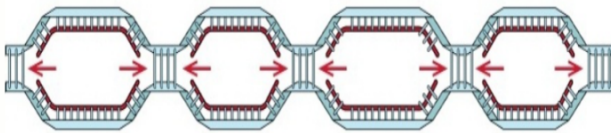
Answer: -protein-RNA complex

Q3:Which of the following stages/steps of translation require energy:

- elongation
- termination
- aminoacyl tRNA formation
- formation of translation initiation complex
- all of them

Answer:aminoacyl tRNA formation

Q4:



How many replication fork ?

- 2
- 3
- 4
- 8

Answer:8

Q5:Where in the chloroplast is a high concentration of protons expected?

- Stroma
- Thylakoid space
- Inner membrane
- Outer membrane

Answer:thylakoid space

Q6: Which of the following processes does not occur in linear photophosphorylation?

- O₂ is released
- NADPH is oxidized
- NADPH is reduced
- ATP is synthesized

Answer: NADPH is oxidized

Q7: Which of the following processes does not occur in the Calvin cycle?

- CO₂ fixation
- O₂ is released
- Regeneration of CO₂ acceptor
- Reduction of PGA

Answer: O₂ is released

Q8: Which of the following is a gene product?

- RNA & lipids
- lipids & proteins
- RNA & proteins

Answer: RNA & proteins

Q9: What is the process of synthesizing RNA from DNA?

- Translation
- Transcription
- Replication
- Reverse transcription

Answer: transcription

Q10: Which molecules can be used in post translation modification?

- sugar
- lipids
- phosphate group
- B&C
- A,B&C

Answer: A,B&C

Q11: What is the name of the sugar that result from Calvin cycle

- sucrose
- glucose
- G3P
- pyrovate

ANSWER: G3P

Q12: Rubisco, the enzyme used in the reaction of carbon fixation, is:

- RUBP carboxylase-oxygenase
- Calvinase
- Photosynthetic carboxylase
- Carbon dioxide ligase

Answer: RUBP carboxylase-oxygenase

Q13: How many CO₂ is released per glucose molecule in Pyruvate oxidation?

- 0
- 1
- 2
- 3

Answer: 2

Q14: What is the net number of ATP per glucose molecule produced in glycolysis?

- 1
- 2
- 3
- 4

Answer: 2

Q15: Erwin Chargaff postulated that:

- the base composition is different between species
- the A and T are roughly equal, and so C and G
- the base composition is the same between species

- A & B
- B & C

Answer: B & C

Q16: What does it mean when a codon is described as redundant?

- More than one codon codes for the same amino acid
- The same codon can code for more than one amino acid
- Each codon codes for a unique amino acid
- Codons are non-functional in protein synthesis

Answer: More than one codon codes for the same amino acid

Q17: What molecules are utilized during the termination of translation and how many molecules are used?

- 1 ATP
- 2 ATP
- 1 GTP
- 2 GTP

Answer : 2GTP

Q18:Where do fermentation and Glycolysis occur ?

- cytosol
- mitochondria matrix
- chloroplast thylakoid

Answer:cytosol

Q19:Which of the following is not a carbohydrates

- glucose
- glycine
- glycogen
- chitin

Answer: glycine

Q20:What type of bonds are present between alpha helices and beta sheets?

- Hydrogen bonds
- Ionic bonds
- Covalent bonds
- Van der Waals interactions

Answer: hydrogen bond

Q21:Which bonds determine the 3D shape of tRNA?

- Hydrogen bonds
- Ionic bonds
- Covalent bonds
- Disulfide bonds

Answer: hydrogen bond

Q22How many ATP are produced after glycolysis?

- 0 ATP
- 2 ATP
- 4 ATP
- 6 ATP

Answer: 2 ATP

Q23:Where are cristae found?

- Mitochondria
- Endoplasmic reticulum
- Golgi apparatus
- Nucleus

Answer:Mitochondria

Q24: Where does translation occur in eukaryotes?

- Nucleus
- cytosol
- Golgi apparatus
- Endoplasmic reticulum

Answer: cytosol

Q25: When a DNA strand separates into two DNA strands, what percentage of the resulting strands are parent strands?

- 0%
- 25%
- 50%
- 100%

answer: 50%

Q26 : Which components form the backbone of DNA molecules?

- Nitrogenous bases
- Sugar and phosphate groups
- Hydrogen bonds
- Deoxyribose sugar

Answer: Sugar and phosphate groups

Q27: Which component is not required for the initiation of the transcription complex?

- DNA template strand
- RNA polymerase enzyme
- Promoter region
- tRNA molecule

answer: tRNA molecule

Q28: Which enzyme catalyzes the fixation of CO₂ in the Calvin cycle?

- ATP synthase
- Rubisco
- DNA polymerase
- RNA polymerase

answer: Rubisco

Q29: Which enzyme catalyzes the reduction of NAD⁺ to NADH during cellular respiration?

- Mutase
- Enolase
- Dehydrogenase
- ATP synthase

answer: Dehydrogenase

وَبُطِّفِ اللّٰهَ نَجْوًا

Q30:What is the source of hydrogen ions during the reduction of NAD⁺ to NADH during glycolysis?

- a) Pyruvate
- b) Malate
- c) G3P (Glyceraldehyde-3-phosphate)
- d) Acetyl-CoA

answer: G3P

Q31:Which statement is true about cholesterol?

- Only found in plant membranes
- Locates between the phospholipids in the cell membrane
- Can be found in both plant and animal membranes
- Acts as an enzyme in membrane synthesis

answer: Locates between the phospholipids in the cell membrane

Q32: Which part of the cytoskeleton is hollow?

- Actin filaments
- Intermediate filaments
- Microtubules
- Myosin filaments

answer: Microtubules

Q33: What is found on the 5' side of one DNA chain?

- Nitrogenous base
- Sugar molecule
- Phosphate group
- Hydrogen bond

answer:Phosphate group

Q34:What is the direct sugar product of Calvin cycle?

- Glucos
- Glactose
- Amylose
- G3p
- NADH

Answer:G3p

Q35 What is the number of nucleotide pairs in a coded region that encodes for 120 amino acids?

- 120 pairs
- 240 pairs
- 360 pairs
- 480 pairs

Answer: 360 pairs

سبحان الله وبحمده
سبحان الله العظيم

Q36: Which of the following is present in the proofreading process?

- topoisomerase
- DNA polymerase
- primase
- helicase

Answer:DNA polymerase

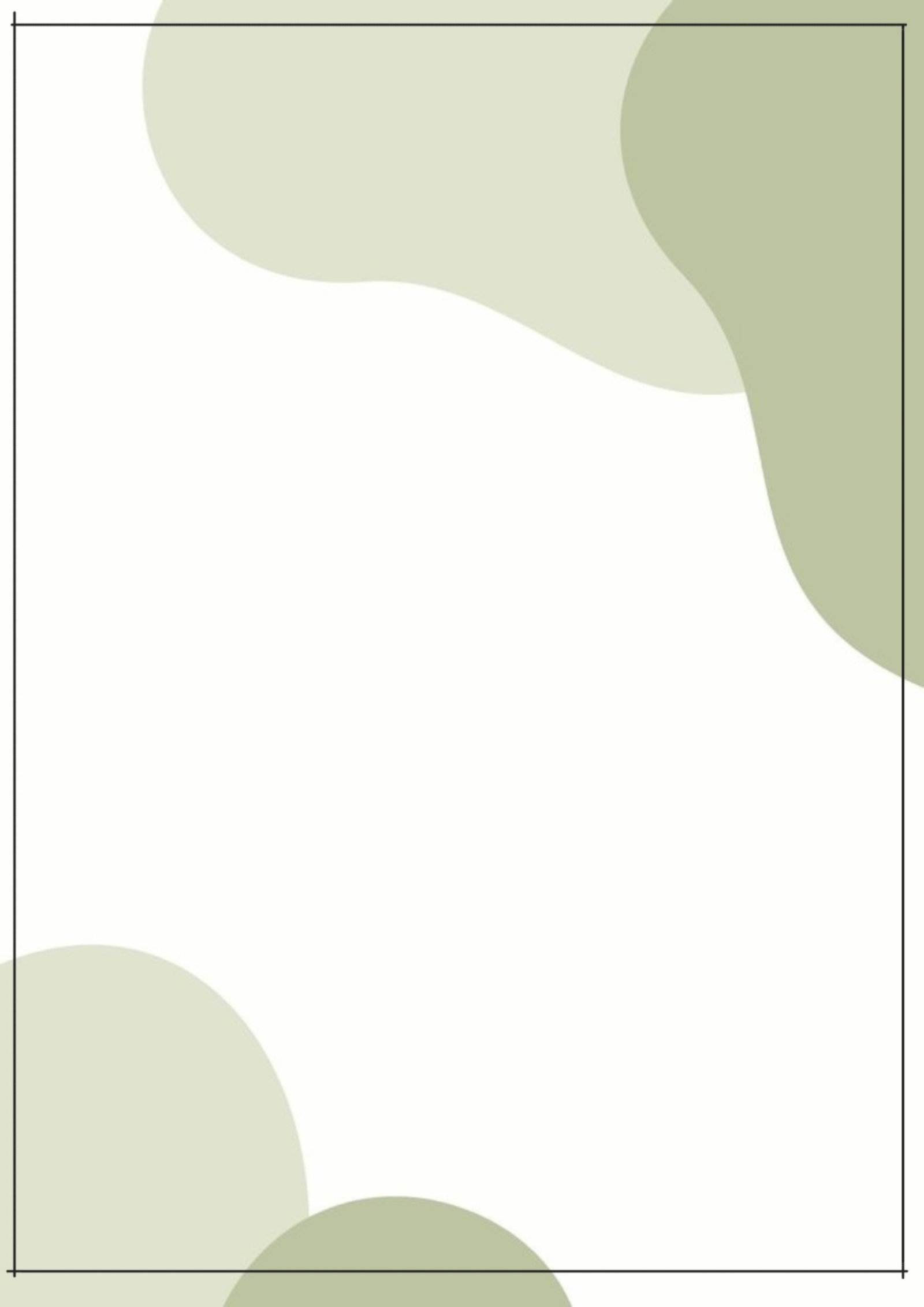
Q37:Which enzyme catalyzes the conversion of Fructose 6-phosphate to Fructose 1,6-bisphosphate?

- PFK
- ATP synthase
- Hexokinase
- Glucose-6-phosphatase

Answer:PFK

Made by Lejan aAdofaat





Biology 101

PAST PAPER

Final 2022

DONE BY : SADEEL MA'MON

- One of the following molecules is hydrophobic:
- A. Starch
- B. Cellulose
- C. Phospholipids
- D. Triacylglycerol
- Ans: D

- One of these is false about Un saturated fatty acid?
- A. they have a carboxyl group
- B. Found in plant oils
- C. found in most animals like cows
- D. have a double bonds
- Ans: c

- A polyribosome is :
- A. A ribosome made of more than 2 amino acid
- B. Multiple ribosomes associated with one chromosome
- C. Multiple ribosomes that translate one mRNA at the same time
- D. Non of the above
- Ans: c

- WATER is perfect in evaporating cooling
- A. True
- B. False
- Ans: a

- What is the length of the DNA Coding region that encodes to 120 amino acid?
- A. 120bp
- B. 360bp
- Ans: B

- Could we consider cholesterol as a triglyceride?
- Ans: no, it's steroid

- What type of enzyme is rubisco?
- Answer: carboxylase

- What is coupled by the sucrose pump?
- Ans :

- Intermediate filament is which junction?
- Answer :desmosomes

- What is not included in the endomembrane system
- Ans : peroxisome

- which one is not considered an organelle:
- A. plastids
- B. mitochondria
- C. nucleoid
- D. lysosomes
- E. Golgi apparatus
- Ans: c

- which pigment works for cyanobacteria under shade/no light?
- Ans : chlorophyll f

- complementary of 5' ATCGC 3' is ?
- Ans : 3' TAGCG 5'

- in plant cells protons can be found in?
- Ans : thylakoid space

- in plant cells atp is produced in?
- Ans : stroma

- hydration cell surrounds :
- Ans: dissolved ions

- pyruvate is
- A. the final product of glycolysis
- B. input of the citric acid cycle
- C. has six carbons
- D. product of oxidative phosphorylation
- E. product of chemiosmosis
- Ans: a

- na-k pump uses ATP to ?
- a) bind 3 k⁺
- b)bind 2 Na⁺
- c) change pumps shape by transferring a phosphate group to the pump
- d) non of the above
- Ans: a

- simple diffusion and facilitated diffusion both:
- a) transfer molecules against their concentration gradient
- b) transfer molecules down their concentration gradient
- c) require energy
- d) only in plant cells
- Ans : b

- a mutation that replaces an amino acid with another is called:
- A.frameshift
- B.nonsense
- C. missense
- D. silent
- E.deletion
- Ans: c

- the flexible base pairing of the third nucleotide base of a codon is called :
- Ans: wobble

- the rate of transcription in eukaryotes is :
- Ans : 40 nucleotides per second

- the electron transport chain reduces :
- Ans : NADP⁺ to NADPH

SOME NOTES FROM 22 STUDENTS:

10- !!!!!!!!

سؤال غريب

Type of chlorophyll that cyanobacterium use in shaded conditions is?

1- chlorophyll a

2- chlorophyll b

3- chlorophyll f

4- chlorophyll g

~~1- اجا سؤال عن نوع انزيم ال rubisco والجواب .carboxylase~~

2- اجا سؤال عن ال

rate of transcription for eukaryots?

والجواب 40 nucleotide/sec

3- اجا سؤال عن ال

translation machinery includes?

واظن الجواب tRNA+rRNA+mRNA

4- وانه كمية الطاقة اللي لازم تصرفها على ال disassembly

الجواب 2GTP

5- without one of the following translation can't start?

الجواب the codon AUG

6- where can we find the higher concentration of protons (H+) during the process of photosynthesis?

الجواب in the thylakoid space


7- where does ATP forms in photosynthesis?

الجواب stroma

8- سؤال عن أبعاد ال DNA

9- سؤال عن القاعدتين اللي حطهم chargaff



- اللهم عليك بأعدائك أعداء الدين اللهم رد عنا كيدهم وقل حدهم وأزل دولتهم وأذهب عن أرضك سلطانهم ولا تدع لهم سبيلاً على أحد من عبادك المؤمنين اللهم انا نجعلك في نحورهم ونعوذ بك من شرورهم اللهم منزل الكتاب ومجرى السحاب وهازم الأحزاب اهزمهم وانصرنا عليهم اللهم أنزل عليهم بأسك الذي لا يرد عن القوم المجرمين اللهم زلزل أقدامهم ونكس أعلامهم واذهب ريحهم اللهم آمين.
- وفقكم الله وسدد خطاكم وبارك لكم في علمكم، وفقكم الله لما يحب ويرضى 

Final 2022 / Biology

1- What is the similarity between the structure of RNA and DNA ?

Ans : The similarity lies in the orientation or direction of the sugar-phosphate backbone. In both RNA and DNA, the nucleotides are linked together by phosphodiester bonds between the 3' carbon of one sugar molecule and the 5' carbon of the next sugar molecule

2- One of these is false about Un saturated fatty acid?

- A) they have a carboxyl group
- B) Found in plant oils
- C) found in most animals like cows
- D) have a double bonds

Ans : C

3- WATER is perfect in evaporating cooling , This sentence is true or false.

Ans : true

4- What is the length of the DNA Coding region that encodes to 120 amino acid?

Answer: 360bp

5- what is the Minimal Medium ?

Ans : Simple solution containing minimal nutrients for growth

6- What type of enzyme is rubisco?

Ans: carboxylase

7- What is coupled by the sucrose pump?

Ans : This active transport system couples sucrose translocation across the plasma membrane to the proton motive force generated by the H⁺-pumping ATPase

8- The cholesterol is Triglyceride , This sentence is true or false.

Ans : False, it's a steroid

9- Osmosis is the diffusion of:

- a) water
- b) water and ions
- C) Cholesterol
- D) protein
- E) water and protein

Ans : A

10- Intermediate filaments anchor into desmosomes, This sentence is true or false.

Ans : true

11- Which of these is not a component of the extracellular matrix (ECM) in animal tissues ?

- A) proteoglycans
- B) fibronectin
- C) collagens
- D) cellulose
- E) all of the following

Ans : D) Cellulose

12- What is not included in the endomembrane system ?

Ans : peroxisome

13- which one is not considered an organelle?

- A) plastids
- B) mitochondria
- C) nucleoid
- D) lysosomes
- E) Golgi apparatus

Ans : C

14- Type of chlorophyll that cyanobacterium use in shaded conditions is..!

- A- chlorophyll a
- B- chlorophyll b
- C- chlorophyll f
- D- chlorophyll g

Ans: C

15- complementary of 5' ATCGC 3' is ?

Ans: 3' TAGCG 5'

16- where can we find the higher concentration of protons (H⁺) during the process of photosynthesis?

And : thylakoid space

17- where does ATP forms in photosynthesis?

Ans : stroma

18- hydration cell surrounds?

And : dissolved ions

19 - one of the following molecules is hydrophobic.

- A) starch
- B) cellulose
- C) NaCl
- D) phospholipids
- E) triacylglycerol

Ans :E

19 - one of the following molecules is Hydrophilic.

Ans : cellulose

20- pyruvate is ..

- A- the final product of glycolysis
- B- input of the citric acid cycle
- C - has six carbons
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Ans : A

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Ans : change pumps shape by transferring a phosphate group to the pump

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Ans :b

23- a mutation that replaces an amino acid with another is called ...?

- A) frameshift
- B) nonsense
- C) missense
- D) silent
- E) deletion

Ans: C

24- a polyribosome is :

- a) a ribosome made of more than 2 amino acids
- b) multiple ribosomes associated with one chromosome
- c) multiple ribosomes that translate one mRNA at the same time

Ans : C

25- How many " Stop Codons " ?

Ans : The stop codons are three

26- the flexible base pairing of the third nucleotide base of a codon is called :

Ans : wobble

27 - the rate of transcription in eukaryotes is :

Ans : 40 nucleotides per second

28- the electron transport chain reduces :

Ans : NADP+ to NADPH

29- Which one is the negative amino acid ..?

Ans : aspartic acid (Asp) and glutamic acid (Glu).

30- what are the main components involved in translation machinery:

Ans : tRNA , rRNA & mRNA

31- without one of the following translation can't start..

Ans : the codon AUG

32- Related to Chargaff's rules ..

A- The amount of adenine (A) is equal to the amount of thymine (C) in a DNA molecule.

B- The amount of guanine (G) is equal to the amount of cytosine (A) in a DNA molecule.

C- The amount of adenine (C) is equal to the amount of thymine (T) in a DNA molecule.

D- The amount of guanine (G) is equal to the amount of cytosine (T) in a DNA molecule.

E- The amount of guanine (G) is equal to the amount of cytosine (C) in a DNA molecule.

Ans : E



Bio 101 final

Done by Dima Alrafaiah

1. Which of the following is not associated with microfilaments?
 - A. muscle movement
 - B. cytoplasmic streaming
 - C. pseudopodia
 - D. centriole
 - E. maintenance of cell shape

2. Which of the following processes includes all the others?
 - A. osmosis
 - B. diffusion of a solute across a membrane
 - C. passive
 - D. transport of an ion down its electrochemical gradient
 - E. diffusion of oxygen across cell membrane

3. By which transport mechanism glucose diffuses down its gradient?
 - A. simple diffusion
 - B. phagocytosis
 - C. active transport pumps
 - D. exocytosis
 - E. facilitated diffusion

4. The active site of an enzyme is not.....
 - A. the region where the substrate bind
 - B. the region where the competitive inhibitor bind
 - C. a specific site
 - D. composed of polysaccharide
 - E. a catalytic site

5. A cell may control its metabolism through:
 - A. allosteric regulation
 - B. cooperativity
 - C. feed-back inhibition
 - D. controlling gene expression
 - E. all of the above

6. Most of aerobic cellular respiration stages in eukaryotic cells is completed in the.....
- A. nucleus
 - B. mitochondrion
 - C. plasma membrane
 - D. cytoplasm
 - E. endoplasmic reticulum
7. During the stage of oxidative phosphorylation, the following event(s) happen:
- A. ATP, NADH, FADH₂, CO₂, and water are formed
 - B. glucose is split into two pyruvates
 - C. NAD⁺ regenerated, two ATP net
 - D. H⁺ flows through ATP synthases
 - E. NAD⁺ is reduced to NADH
8. In lactic acid fermentation, _____ is the final acceptor of electrons stripped from glucose
- A. oxygen
 - B. pyruvate
 - C. acetaldehyde
 - D. sulfate
 - E. NAD⁺
9. Which of the following is/are used in the reduction phase of the Calvin cycle?
- A. CO₂
 - B. RuBP
 - C. ATP
 - D. NADPH
 - E. ATP and NADPH
10. What catalyses' the carbon fixation phase of the Calvin cycle?
- A. P700
 - B. kinase
 - C. rubisco
 - D. ATP synthase
 - E. regenerase
11. Which of the following is the ultimate source of the carbon in the sugar produced during Calvin cycle?
- A. CO₂
 - B. water
 - C. ATP
 - D. NADPH
 - E. all of the above

12. Which of the following does not occur during the Calvin cycle?
- A. Carbon fixation
 - B. oxidation of NADPH
 - C. release of oxygen
 - D. regeneration of the CO₂ acceptor
 - E. consumption of ATP
13. Hershey and chase made use of which of the following facts in their experiment?
- A. DNA contains nitrogen, whereas protein does not contain nitrogen.
 - B. DNA contains phosphorus, whereas protein contains sulfur.
 - C. DNA contains sulfur, whereas protein does not contain sulfur.
 - D. DNA contains purines, whereas protein contains pyrimidines.
 - E. DNA contains pyrimidines, whereas protein contains purines.
14. Griffith experiments on R and S types of *streptococcus pneumonia* emphasized the concept of:
- A. Transformation
 - B. translation
 - C. transcription
 - D. replication
 - E. regeneration
15. DNA polymerase I ...
- A. joins Okazaki fragments
 - B. synthesizes primers
 - C. synthesizes tRNA
 - D. removes primers and replaces them with DNA
 - E. all of the above
16. Which of the following statement is correct about DNA replication?
- A. DNA replication proceeds in both directions of the origin of replication
 - B. DNA replication is dispersive
 - C. topoisomerase unwinds the double helix at the replication fork
17. Which DNA strand is synthesized continuously towards the replication fork?
- A. lagging strand
 - B. leading strand
 - C. Okazaki strands
 - D. template strand
 - E. 30nm fiber
18. How many base pairs exist in one full turn of the DNA double helix?

- A. 10
- B. 5
- C. 8
- D. 12
- E. 14

19. What determines the nucleotide sequence of the newly synthesized strand during DNA replication?

- A. the type of DNA polymerase catalyzing the reaction
- B. the relative amounts of the four nucleoside triphosphates in the cell
- C. the nucleotide sequence of the template strand
- D. the type of primase used in the reaction
- E. the arrangement of histones in the sugar phosphate backbone

20. Which of the following synthesizes short segments of RNA needed for the synthesis of DNA strands?

- A. Helicase
- B. DNA polymerase III
- C. Ligase
- D. DNA polymerase I
- E. primase

21. In a nucleosome, the DNA is wrapped around :

- A. polymerase molecules
- B. ribosomes.
- C. histones
- D. a thymine dimer
- E. spliceosome

22. Which of the following help to hold the DNA strands apart while they are being replicated?

- A. primase
- B. ligase
- C. DNA polymerase
- D. single-strand binding proteins
- E. exonuclease

23. What are the coding segments of a stretch of eukaryotic DNA called?

- A. Introns
- B. exons
- C. start codons
- D. replicons
- E. poly A tail

24. Transcription in eukaryotes requires which of the following in addition to RNA polymerase?

- A. the protein product of the promoter
- B. start and stop codons
- C. ribosomes and tRNA
- D. transcription factors
- E. aminoacyl synthetase

25. The template DNA that gives the following RNA strand 5' AAA AUG AGU AAG 3' is

- A. 3' TTT ATG TGC TTC 5'
- B. 3' TTT TAC TCA TTC 5'
- C. 3' UUU TAC UCA UUC 5'
- D. 3' AAA ATG AGT AAG 5'
- E. 5' TTT TAC TCA TTC 3'

26. During splicing of pre mRNA, which molecular component of the spliceosome catalyzes the excision reaction?

- A. protein
- B. DNA
- C. RNA
- D. lipid
- E. sugar

27. Which statement is INCORRECT?

- A. missense mutation is the substitution that change one amino acid to another one
- B. base-pair substitution can cause a major change in a protein
- C. nucleotide analogs pair incorrectly during DNA replication
- D. point mutation can change a codon for an amino acid into a stop codon
- E. a frameshift mutation occurs whenever the number of nucleotide inserted or deleted is a multiple of three

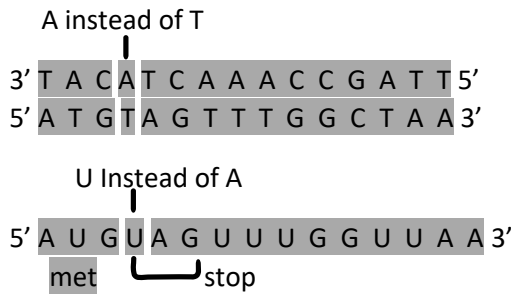
28. In a gene, the change in a base pair that does not cause a change in the sequence of the produced polypeptide is known as a

- A. frameshift mutation
- B. silent mutation
- C. missense mutation
- D. nonsense mutation
- E. none of the above

29. Polyribosomes are

- A. groups of ribosomes reading a single mRNA simultaneously
- B. ribosomes containing more than two subunits
- C. multiple copies of ribosomes associated with giant chromosomes
- D. aggregations of vesicle containing ribosomal RNA
- E. ribosomes associated with more than one tRNA

30. What type of mutation is shown in the figure below?



- A. silent mutation
- B. nonsense mutation
- C. Missense mutation
- D. frameshift mutation
- E. none of the above

31. Functional ribosomes are directed to the ER membrane by

- A. a specific characteristic of the large ribosomal subunit
- B. a signal-recognition particle
- C. a channel in the nucleus
- D. a chemical signal given off by the ER
- E. the sequence of bases on the 5' UTR of the mRNA

32. All of the following are directly involved in translation EXCEPT

- A. ribosomes
- B. tRNA
- C. amino acids
- D. DNA
- E. mRNA

33. A promoter is a

- A. binding site for DNA polymerase
- B. binding site for RNA polymerase
- C. start signal for replication
- D. stop signal for transcription
- E. a translation initiation factor

34. During translation which ribosomal subunit is the first to attach to the mRNA strand?

- A. Top
- B. bottom
- C. small
- D. large
- E. snRNPs

35. After mRNA (5' -AUGUAUACAGCACAUCGAUGACAA- 3') translation is completed, what will be the first amino acid and the total number of amino acids in the synthesized polypeptide?

- A. Methionine. 9 amino acids
- B. Methionine, 7 amino acids
- C. arginine, 8 amino acids

- D. methionine, 6 amino acids
- E. methionine, 8 amino acids

36. What is the property of water that help in transport of water against gravity from the roots in plant?

- A. cohesion alone
- B. adhesion alone
- C. specific heat
- D. adhesion and cohesion
- E. water expansion

37. Which of the following molecules contain beta glycosidic linkage?

- A. amylose
- B. glycogen
- C. amylopectin
- D. collagen
- E. cellulose

38. Which of the following does not apply to steroids?

- A. some are hormones
- B. composed of fatty acids
- C. have four rings structure
- D. water insoluble
- E. may be present In the plasma membrane

39. Starch and cellulose are alike in that both are:

- A. polysaccharides
- B. found only in animal cells
- C. composed of identical subunits
- D. contain non-polar, fatty acid side chains
- E. both are storage polysaccharide in plants

40. The cells synthesizing steroid hormones are rich in:

- A. rough ER
- B. smooth ER
- C. lysosome
- D. contractile vacuoles
- E. peroxisomes

41. One of the following is a function of Golgi apparatus.....

- A. synthesis of steroid hormones
- B. detoxification of many organic compounds, like barbiturates and ethanol
- C. release of glucose into the bloodstream
- D. sequestration of calcium Ca^{+2} ions
- E. sorting and packaging of secretory proteins

42. The formation of thymine dimers results from which of the following?
- A. Exposure to infrared radiation
 - B. Exposure to gamma radiation
 - C. Exposure to ultraviolet radiation
 - D. Exposure to visible light
 - E. Exposure to both A and B
43. What are the components of a spliceosome?
- A. DNA and protein
 - B. protein and small nuclear RNA
 - C. Exons and introns
 - D. proteins and mRNA
 - E. coding and noncoding RNAs
44. Which of the following is a function of a signal peptide?
- A. to direct an mRNA molecule into Golgi apparatus
 - B. to bind RNA polymerase to DNA and initiate transcription
 - C. to terminate translation of the messenger RNA
 - D. to target polypeptides to the endoplasmic reticulum
 - E. to signal the initiation of transcription
45. Which of the following is mis-matched?
- A. splicing: Eukaryotic premRNA
 - B. lagging strand : Okazaki fragments
 - C. TATA box: DNA polymerase binding
 - D. (G=C) and (A=T): chargaff's rules
 - E. DNA: double helix
46. According to the following mRNA 5' -AUCUCAAAAAGGAAUACCGGCC- 3' , what is the first coded amino acid? And how many amino acids will be in the polypeptide?
- A. Methionine , 9 amino acids
 - B. methionine, 6 amino acids
 - C. methionine , 5 amino acids
 - D. leucine, 9 amino acids
 - E. methionine , 8 amino acids
47. An signal recognition particle (SRP) is targeting for what location?
- A. Cytosol
 - B. nucleus
 - C. nucleolus
 - D. smooth ER
 - E. rough ER
48. The steps involve in sequence of translation elongation circle include.....
- A. codon recognition, peptide bond formation, translocation
 - B. initiation, elongation, termination
 - C. initiation , peptide bond formation, termination
 - D. codon recognition, termination , initiation
 - E. peptide bond formation, translocation, termination

49. As a ribosome translocate along an mRNA molecule by one codon, which of the following occurs?
- A. The tRNA that was in the A site moves into the P site
 - B. the tRNA that was in the P site moves into the A site
 - C. the tRNA that was in the A site moves into the E site and is released
 - D. the tRNA that was in the A site departs from the ribosome via a tunnel
 - E. the polypeptide enters the E site
50. Which of the following is not an mRNA codon
- A. UUG
 - B. UCU
 - C. TAG
 - D. UUU
 - E. AUG
51. Which component is the last to join the initiation complex during the initiation of translation?
- A. the mRNA molecule
 - B. the small ribosomal subunit
 - C. the large ribosomal subunit
 - D. the initiator tRNA
 - E. both B and C
52. A nucleotide-pair substitution is
- A. insertion of nucleotide pair in a gene
 - B. deletion of nucleotide pair in a gene
 - C. replacement of nucleotide pair with another pair of nucleotides
 - D. replacement of nucleotide pair with nucleotide analogs
 - E. C and D are correct
53. As a molecule of mRNA is moved through a ribosome, _____ are _____ into _____, one by one until the top codon is reached.
- A. codons, translated, amino acids
 - B. codons, transcribed, amino acids
 - C. codons, replicated, amino acids
 - D. codons, translated, nucleotides
 - E. codons, transcribed, nucleotides
54. The change in a nucleotide pair may transform one codon into another that is translated into the same amino acid is described as.....
- A. silent mutation
 - B. nonsense mutation
 - C. missense mutation
 - D. frameshift mutation
 - E. all of the above

55. The high specific heat of water is responsible for the following, except:
- A. helps moderate earth's climate
 - B. stabilizes ocean temperature
 - C. enables organisms to resist changes in their own temperature
 - D. large amount of heat is required to raise the temperature of water
 - E. hydrogen bond formation between water molecules
56. Which of the following molecules is not normally found in a ribozyme?
- A. Uracil
 - B. Thiamine
 - C. guanine
 - D. Cytosine
 - E. none of the following
57. When a protein is boiled, it loses all levels of organization. When this happens, the protein is said to be :
- A. Hydrolyzed
 - B. denatured
 - C. dehydrated
 - D. plasmolyzed
58. A phospholipid molecule has:
- A. two hydrophobic tails and one hydrophilic head
 - B. two hydrophilic tails and one hydrophobic head
 - C. one hydrophobic tail and one phosphate group
 - D. three fatty acids and one phosphate group
 - E. two phosphate groups and one fatty acid
59. What type of protein fibers make up the nuclear lamina?
- A. Microfilaments
 - B. intermediate filaments
 - C. actin filaments
 - D. microtubules
 - E. fibronectins
60. Which cytoskeletal element is responsible for the movement of chromosomes during cell division?
- A. microfilaments
 - B. intermediate filaments
 - C. actin filaments
 - D. microtubules
 - E. fibronectins

1. d
2. c
3. e
4. d
5. e
6. b
7. d
8. b
9. e
10. c
11. a
12. c
13. b
14. a
15. d
16. a
17. b
18. a
19. c
20. e
21. c
22. d
23. b
24. d
25. b
26. c
27. e
28. b
29. a
30. b
31. b
32. d
33. b
34. c
35. d
36. d
37. e
38. b
39. a
40. b
41. e
42. c
43. b
44. d
45. c
46. e
47. e
48. a
49. a
50. c
51. e
52. e
53. a
54. a

WISH YOU ALL THE BEST.