Question 1

Time left 0:09:14

Answer saved

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Flag question

The triple helix DNA model of Linus Pauling was not supported because of

a. Destabilization from repulsion of negative charges in OH- groups in the core

b. Destabilization from repulsion of partially-positive carbonyl carbon in the core

c. Destabilization from repulsion of lone pair of electrons on the amino nitrogen in the core

d. Destabilization from repulsion of negative charges in PO43- groups in the core

e. Destabilization from repulsion of methyl groups in cytosine in the core

Clear my choice

Question **2**

Not yet answered

Marked out of 1.00

Flag question

Select the activity that does not belong to biophysics

- a. Disease understanding
- b. Invention of disease diagnostics
- c. Development of techniques and devices for disease treatment
- d. Sequencing of genes
- e. Development of databases on biological materials

Question 3

Answer saved

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Flag question

Which of the questions below examines molecular biophysics?

a. How do atoms join to make DNA and proteins?

b. How do proteins work?

c. How do variations in energy express different disease occurrence?

d. How are variations in genes and proteins expressed in individual differences?

e. How are variations in genes and proteins expressed in disease control

Clear my choice

Question **4**

Answer saved

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Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, mixed with DNase, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome.

a. Extract from diseased mice showed only R strain; mice lived; transformation occurred

b. Extract from diseased mice showed only S strain; mice died; transformation occurred

c. Extract from diseased mice showed only S strain; mice died; no transformation occurred E) Extract from diseased mice showed both S and R strain; mice died, transformation occurred

d. Extract from diseased mice showed only R strain; mice lived; no transformation occurred

Clear my choice

Question 5

Answer saved

Marked out of 1.00

Flag question

Erwin Chargaff's GC contents of Sarcinia, Micrococcus and Herpes simplex are

a. 73 each

b. 39 each

c. 22 each

d. 72 each

e. 51 each

Clear my choice

Question 6

Answer saved

Marked out of 1.00

Flag question

Identify the correct pair in DNA structure

a. Uracil and guanine

b. Guanine and cytosine

c. Purine and thymine

d. Adenine and cytosine

e. Pyrimidine and adenine

Clear my choice

Question 7

Answer saved

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice with RNase, heat killed it, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome.

a. Extract from dead mice showed only S strain

b. Extract from live mice showed only S strain

c. Extract from diseased mice showed only R strain

d. Extract from diseased mice showed no S or R strain

e. Extract from diseased mice showed both S and R strain

Clear my choice

Question 8

Answer saved

Marked out of 1.00

Flag question

Pick the odd statement out about the Watson and Crick DNA model

a. The two strands must be antiparallel

b. DNA must be double stranded

c. Purine-pyrimidine pair creates constrictions and bulges to make a regular DNA shape

d. One strand must be the complement of the other

e. The Watson and Crick model has a B-DNA shape

Clear my choice

Question 9

Time left 0:08:45

Answer saved

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice with RNase, heat killed it, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome.

a. Extract from diseased mice showed both S and R strain; mice died; no transformation occurred

b. Extract from diseased mice showed only R strain; mice lived transformation occurred

c. Extract from diseased mice showed only S strain; mice died; no transformation occurred

d. Extract from diseased mice showed both S and R strain; mice died, transformation occurred

e. Extract from diseased mice showed no S or R strain; mice lived; no transformation occurred

Clear my choice

Question **10**

Answer saved

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice with RNase, heat killed it, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome.

a. Extract from diseased mice showed both S and R strain; mice lived

b. Extract from diseased mice showed no S or R strain; mice lived

c. Extract from diseased mice showed only R strain; mice lived

d. Extract from diseased mice showed only S strain; mice died

e. Extract from diseased mice showed both S and R strain; mice died

Clear my choice

Question **11**

Not yet answered

Marked out of 1.00

Flag question

You isolated DNA from an unknown bacteria and carried out elemental analysis on it to get a nitrogen:phosphorus ratio of 1.89. If indeed the isolate is DNA, what could have caused this high N:P ratio? I. Contamination with other DNA material in the vial II. Contamination with protein III. Contamination with lipids

- a. II and III
- b. III only
- c. I only
- d. I and III
- e. II only

Question **12**

Not yet answered

Marked out of 1.00

Flag question

Erwin Chargaff's GC contents of mouse spleen, salmon sperm, and Bacillus subtilis

- a. 34 each
- b. 39 each
- c. 22 each
- d. 44 each
- e. 73 each

Question 13

Answer saved

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, heat killed it, added trypsin and chymotrypsin, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome

a. Extract from diseased mice showed no S or R strain

b. Extract from diseased mice showed only S strain

c. Extract from diseased mice showed both S and R strain

d. Extract from diseased mice showed only R strain

e. None of the above

Clear my choice

Question 14

Answer saved

Marked out of 1.00

Flag question

31. Choose the statements which are true about the characteristics of the purine-pyrimidine pair in DNA. I. The GC pair and AT pair have different shapes II. The GC pair and AT pair have same shape III. Similarity in shape of AT and GC pairs makes DNA a regular molecule IV. Differences in shape of AT and GC pairs makes DNA irregular

a. I and IV

b. I only

c. II only

d. IV only

e. II and III

Clear my choice

Time left 0:16:57

Question **15**

Answer saved

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, heat killed it, mixed with DNase, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome.

a. Extract from diseased mice showed only S strain; mice died

b. Extract from diseased mice showed no S or R strain; mice lived

c. Extract from diseased mice showed only R strain; mice lived

d. Extract from diseased mice showed both S and R strain; mice died

e. Extract from diseased mice showed both S and R strain; mice lived

Clear my choice

Question **16**

Not yet answered

Marked out of 1.00

Flag question

Erwin Chargaff's GC contents of slime mold and Mycobacterium phlei are

- a. 51 each
- b. 46 and 51
- c. 40 each
- d. 34 and 72
- e. 22 and 73

Time left 0:23:22

Question **17**

Not yet answered

Marked out of 1.00

Flag question

Choose the functional groups that participate in noncovalent hydrogen bonding in DNA. I. Carbonyl oxygen of adenine and amino nitrogen of thymine II. Amino nitrogen of adenine and C2 carbonyl of thymine III. Amino nitrogen of adenine and C4 carbonyl of thymine IV. N9 of adenine and amino nitrogen of thymine V. Amino nitrogen of adenine and amino nitrogen of thymine

- a. V only
- b. I and IV
- c. III and V
- d. III only
- e. II only

Question **18**

Not yet answered

Marked out of 1.00

Flag question

The X-shape X-ray diffraction pattern of the DNA of Maurice Wilkins and Rosalind Franklin interprets as I. DNA must have an irregular sequence of bases II. The purine and pyrimidine base composition differ by organisms III. DNA must be a simple α-helix like proteins IV. DNA must be a simple structure occurring in a repetitive form

- a. IV only
- b. II only
- c. II and III
- d. III only
- e. I and III

Question 19

Answer saved

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, heat killed it, mixed with DNase, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome.

a. Extract from diseased mice showed only S strain; mice lived; no transformation occurred

b. Extract from diseased mice showed both S and R strain; mice died, transformation occurred

c. Extract from diseased mice showed only S strain; mice died; no transformation occurred

d. Extract from diseased mice showed only R strain; mice lived; no transformation occurred

e. Extract from diseased mice showed both S and R strain; mice lived; no transformation occurred

Question **20**

Time left 0:22:52

Not yet answered

Marked out of 1.00

Flag question

The activities in a lab listed below is a representation of biophysics except

- a. How do the interactions create information or communication needed by the biological system?
- b. Elucidation of membrane formation
- c. Determine how a protein folds,
- d. Organize membranes and enzymes assemble new structural elements
- e. Determine how membranes and enzymes extract energy

Question **21**

Time left 0:32:53

Not yet answered

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, heat killed it, mixed with organic solvent, chloroform, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome

- a. Extract from diseased mice showed no S or R strain; mice lived; no transformation occurred
- b. Extract from diseased mice showed only R strain; mice died; no transformation occurred
- c. Extract from diseased mice showed both S and R strain; mice died, transformation occurred
- d. Extract from diseased mice showed both S and R strain; mice lived; transformation
- e. Extract from diseased mice showed only S strain; mice died; no transformation occurred

Question **22**

Time left 0:32:30

Not yet answered

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, mixed with DNase, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome.

a. Extract from diseased mice showed only S strain; mice died

b. Extract from diseased mice showed only S strain; mice lived

c. Extract from diseased mice showed only R strain; mice died

d. Extract from diseased mice showed only R strain; mice lived

e. Extract from diseased mice showed both S and R strain; mice died

Clear my choice

Question **23**

Not yet answered

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, heat killed it, mixed with DNase, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome.

- a. Extract from dead mice showed both S and R strain
- b. Extract from diseased mice showed no S or R strain
- c. Extract from diseased mice showed only S strain
- d. Extract from diseased mice showed only R strain
- e. Extract from live mice showed only S strain

Question **24**

Not yet answered

Marked out of 1.00

Flag question

At high pH, hydrogen bonding in DNA is disrupted by

- a. Removal of oxygen shared between the N-base electronegative centers
- b. Removal of OH- shared between the N-base electronegative centers
- c. Removal of H+ shared between the N-base electronegative centers
- d. Addition of H+ shared between the N-base electronegative centers
- e. Addition of OH- shared between the N-base electronegative centers

Question **25**

Not yet answered

Marked out of 1.00

Flag question

Erwin Chargaff's GC contents of Haemophilus influenza and Saccharomyces cerevisiae are

- a. 43 each
- b. 44 each
- c. 72 each
- d. 39 each
- e. 22 each

Question **26**

Time left 0:30:16

Not yet answered

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, heat killed it, mixed with organic solvent, chloroform, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome

- a. Extract from diseased mice showed both S and R strain
- b. Extract from diseased mice showed no S or R strain
- c. Extract from diseased mice showed only R strain
- d. Extract from diseased mice showed only S strain
- e. Extract from dead mice showed both S and R strain

Question **27**

Answer saved

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, heat killed it, added trypsin and chymotrypsin, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome

a. Extract from diseased mice showed both S and R strain; mice died, transformation occurred

b. Extract from diseased mice showed only R strain; mice lived transformation occurred

c. Extract from diseased mice showed both S and R strain; mice died; no transformation occurred

d. Extract from diseased mice showed only S strain; mice died; no transformation occurred

e. Extract from diseased mice showed no S or R strain; mice lived; no transformation occurred

Question 28

Not yet answered

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, mixed with DNase, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome.

- a. Extract from diseased mice showed no S or R strain
- b. None of the above
- c. Extract from diseased mice showed only R strain
- d. Extract from diseased mice showed only S strain
- e. Extract from diseased mice showed both S and R strain

Question 29

Not yet answered

Marked out of 1.00

Flag question

33. Choose the statements which are not true about the semiconservative replication of DNA. I. two daughter DNA duplexes are exactly the same as the parent II. one daughter strand is different from the parent strand III. A daughter strand grows in a 3→5 direction and the other strand in a 5→3 direction IV. Formation of the daughter strand is governed by complementarity

- a. II only
- b. II and III
- c. III only
- d. I and IV
- e. I only

Question 30

Time left 0:29:16

Not yet answered

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, heat killed it, mixed with organic solvent, chloroform, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome

- a. Extract from diseased mice showed both S and R strain; mice died
- b. Extract from diseased mice showed both S and R strain; mice lived
- c. Extract from diseased mice showed only S strain; mice lived
- d. Extract from diseased mice showed only S strain; mice died
- e. Extract from diseased mice showed only R strain; mice lived

Question **31**

Not yet answered

Marked out of 1.00

Flag question

Identify the structure with the largest molecular mass

- a. 2'-deoxythymidine monophosphate
- b. 2'-deoxyadenosine monophosphate
- c. 2'-deoxyuridine monophosphate
- d. 2'-deoxycytidine monophosphate
- e. 2'-deoxyguanosine monophosphate

Question **32**

Not yet answered

Marked out of 1.00

Flag question

Which of these events in a cell is governed by biophysics?

- a. Physical forces and properties of molecular and atomic structures,
- b. How Do interactions at the atomic level ceate biologically active structures?
- c. The components of a cell
- d. How The components in a cell interact to drive cell processes
- e. Cell division

Question 33

Not yet answered

Marked out of 1.00

Flag question

Predict the rate of denaturation of yeast DNA with the following reagents: 8M urea, 8.5 M urea, 5 M urea

- a. 5 M >8 M > 8.5 M
- b. 8.5 M>5M>8 M
- c. 8.5 M< 5 M<8 M
- d. None of the above
- e. 5 M<8 M < 8.5 M

Question **34**

Not yet answered

Marked out of 1.00

Flag question

Choose the functional groups that participate in noncovalent hydrogen bonding in DNA

- a. Carbonyl oxygen of cytosine and N9 of guanine
- b. Amino nitrogen of guanine and N1 of cytosine
- c. Amino nitrogen of cytosine and N9 of guanine
- d. Carbonyl oxygen of guanine and N1 of cytosine
- e. Carbonyl oxygen of guanine and amino nitrogen of cytosine

Time left 0:25:44

Question **35**

Not yet answered

Marked out of 1.00

Flag question

34. The melting temperature of genomic DNA of three bacterial isolates were determined in the lab to be as follows: isolate A 67 oC, isolate B 75 oC, and isolate C 59 oC. Predict the order of their GC content.

- a. C>B>A
- b. A>B>C
- c. B>A>C
- d. B>C>A
- e. C>A>B

Question 36

Not yet answered

Marked out of 1.00

Flag question

Avery, Mcleod, MacCarthy treated serum from Pneumococus-infected mice, heat killed it, added trypsin and chymotrypsin, mixed it with live R strain, and infected healthy mice with it.Choose the correct outcome

- a. Extract from diseased mice showed only S strain; mice died
- b. Extract from diseased mice showed both S and R strain; mice died
- c. Extract from diseased mice showed both S and R strain; mice lived
- d. Extract from diseased mice showed only R strain; mice lived
- e. Extract from diseased mice showed no S or R strain; mice lived