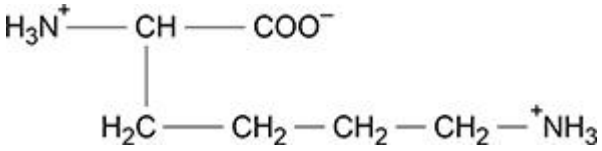
Q1.

Which structure shows a zwitterion of an amino acid?

A



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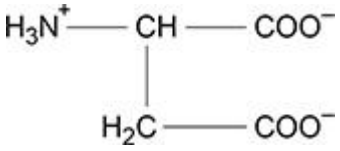
B



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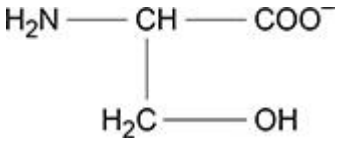
C



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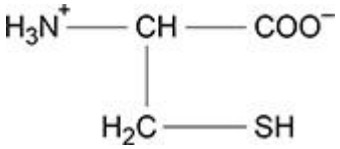
D



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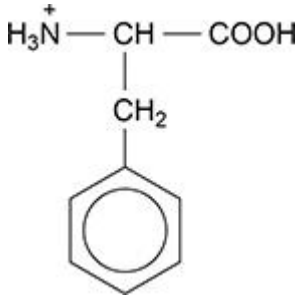
(Total 1 mark)

Q2.

Which structure is formed by phenylalanine in solution at pH = 3?

A 

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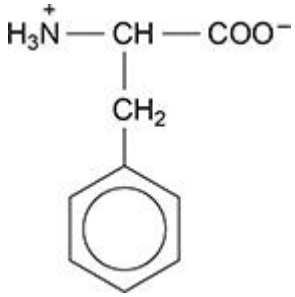
B 

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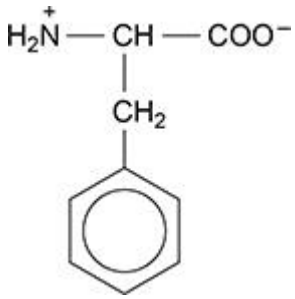
C 

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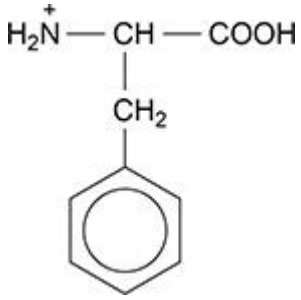
D 

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(Total 1 mark)

Q3.

Which statement about enzymes is **not** correct?

A The tertiary structure of an enzyme influences which molecules can bind to the active site. ⬭

B The action of enzymes can be inhibited by a molecule or ion that binds to the active site. ⬭

C Enzymes work equally well on both optical isomers of a substrate. ⬭

D Computers can be used to design drugs to block active sites on enzymes. ⬭

(Total 1 mark)

Q4.

Cisplatin has the formula $[Pt(NH_3)_2Cl_2]$
Cisplatin is an anti-cancer drug that prevents replication of DNA.

When cisplatin bonds to DNA, which is the correct ligand replacement reaction?

A replacement of one NH_3 ligand ⬭

B replacement of two NH_3 ligands ⬭

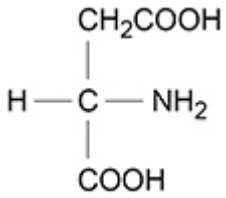
C replacement of one NH_3 ligand and one Cl^- ligand ⬭

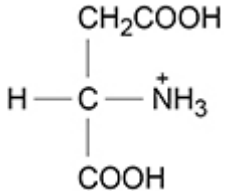
D replacement of two Cl^- ligands ⬭

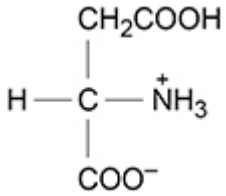
(Total 1 mark)

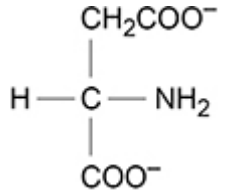
Q5.

Which is the main species present in an aqueous solution of aspartic acid at pH = 14?

A 

B 

C 

D 

(Total 1 mark)

Q6.

Which type of interaction between polypeptide chains is mainly responsible for maintaining the secondary structure of a protein in the form of an alpha helix?

A covalent bonds ⬭

B hydrogen bonds ⬭

C ionic interactions ⬭

D van der Waals forces ⬭

(Total 1 mark)

Q7.

Which compound is **not** a 2-aminocarboxylic acid?

A $CH_3CH(NH_2)COOH$ ⬭

B $CH_3CH(NH_2)CH_2COOH$ ⬭

C $CH_3CH_2CH(NH_2)COOH$ ⬭

D $(CH_3)_2CHCH(NH_2)COOH$ ⬭

(Total 1 mark)