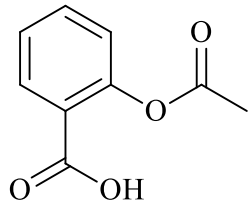
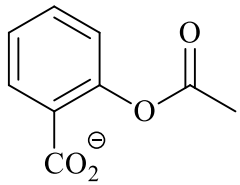
Marks 7

- The structures of the drugs aspirin and amphetamine are shown below.

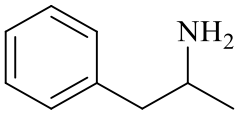
  (a) Draw the conjugate base of aspirin and the conjugate acid of amphetamine.
  (b) *Circle* the form of each that will be present in a highly acidic environment.



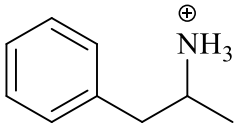
aspirin



conjugate base of aspirin



amphetamine



conjugate acid of amphetamine

Ions are less likely to cross cell membranes than uncharged molecules. One of the drugs above is absorbed in the acid environment of the stomach and the other is absorbed in the basic environment of the intestine. Identify which is absorbed in each environment below and *briefly* explain your answers.

Drug absorbed in the stomach:	**aspirin** / amphetamine
Drug absorbed in the intestine:	aspirin / **amphetamine**

Aspirin is absorbed in stomach. In this acidic environment, it is mainly in its protonated uncharged form.

Amphetamine is absorbed in the basic environment of the intestine where it exists as uncharged unprotonated molecule.

THIS QUESTION CONTINUES ON THE NEXT PAGE.