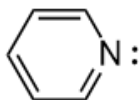
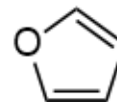




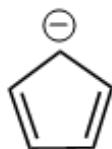
- 1 What is the name of the compound shown? Is it aromatic?



2

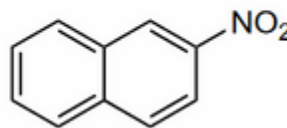
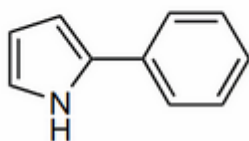
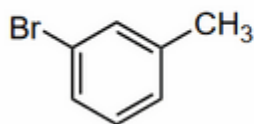


- 3 Add all missing H atoms and lone pairs in the given drawing. Is this structure aromatic?



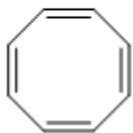
4

Provide an acceptable name for each compound.

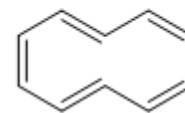
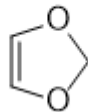


5 Determine whether or not each of the following is aromatic. Explain.

6



7

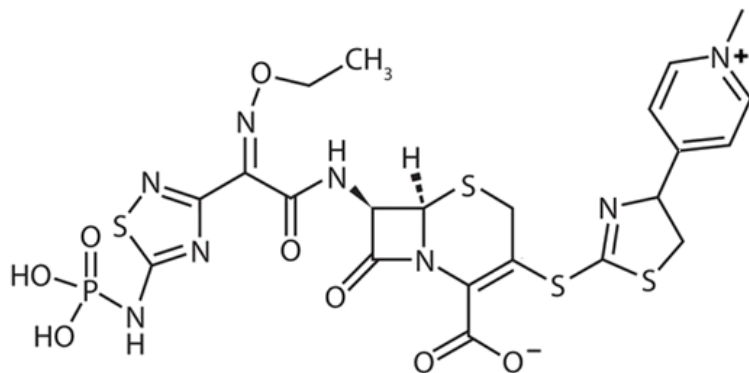


Shown below is ceftaroline (trade names Teflaro and Zinforo), an antibiotic drug that was introduced in 2010. By 2014, MRSA had mutated to develop resistance. Identify the aromatic ring(s) in ceftaroline.

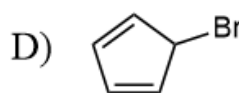
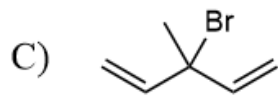
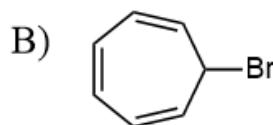
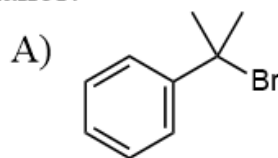
10

Draw *ortho*-nitrophenol.

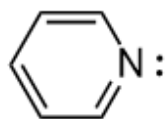
8



9 Of the following, which is LEAST likely to undergo an S_N1 reaction with ethanol?



1 What is the name of the compound shown?



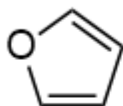
- A) Purine
- B) Pyridine
- C) Pyrrole
- D) Pyrimidine
- E) Pyridinium

Is the given compound aromatic?

- A) Yes, because it cyclic, with 6 electrons in contiguous *p* orbitals.
- B) Yes, because it cyclic, with 8 electrons in contiguous *p* orbitals.
- C) No, because 8 electrons does not satisfy Hückel's Rule.
- D) No, because it is not planar.

2

What is the name of the compound shown?

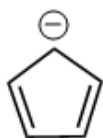


- A) Oxazole
- B) Oxobenzene
- C) Pyrrole
- D) Furan
- E) Tetrahydrofuran (THF)

Is the given compound aromatic?

- A) Yes, because it cyclic, with 6 electrons in contiguous *p* orbitals.
- B) Yes, because it cyclic, with 8 electrons in contiguous *p* orbitals.
- C) No, because 8 electrons does not satisfy Hückel's Rule.
- D) No, because it is not planar.

- 3 In the anion shown below, how many hydrogen atoms and lone pairs of electrons are on the anionic carbon atom?



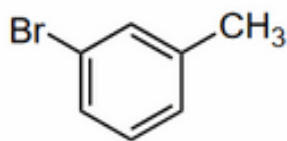
- A) 0 H atoms and 2 lone pairs
- B) 1 H atom and 2 lone pairs
- C) 1 H atom and 1 lone pair
- D) 2 H atoms and 1 lone pair
- E) 2 H atoms and 2 lone pairs

Is the given structure aromatic?

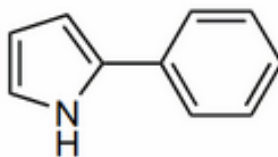
- A) Yes, because it cyclic, with 6 electrons in contiguous *p* orbitals.
- B) Yes, because it cyclic, with 8 electrons in contiguous *p* orbitals.
- C) No, because 8 electrons does not satisfy Hückel's Rule.
- D) No, because it is not a neutral species.

4

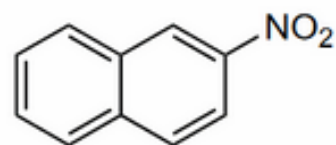
Provide an acceptable name for each compound.



- A) *meta*-bromotoluene
- B) 3-bromotoluene
- C) 1-bromo-3-methylbenzene
- D) 3-bromo-1-methylbenzene
- E) *meta*-bromomethylbenzene



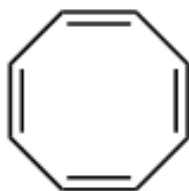
- 1-benzylpyridine
- 1-phenylpyridine
- 2-phenylpyrrole
- 1-phenylpyrrole
- 2-benzylpyrrole



- 2-nitrodibenzene
- 3-nitrodibenzene
- 2-nitronaphthalene
- 3-nitronaphthalene
- 3-nitrodibenzene

5

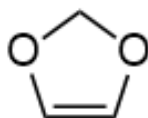
Is the given compound aromatic? Explain briefly.



- A) Yes, because it is cyclic, with $(4n + 2)$ electrons in contiguous p orbitals.
- B) No, because it does not have contiguous p orbitals.
- C) No, because it does not satisfy Hückel's Rule.
- D) No, because it cannot achieve planarity.

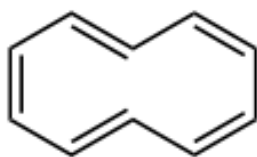
6

Is the given compound aromatic? Explain briefly.



- A) Yes, because it is cyclic, with $(4n + 2)$ electrons in contiguous p orbitals.
- B) No, because it does not have contiguous p orbitals.
- C) No, because it does not satisfy Hückel's Rule.
- D) No, because it cannot achieve planarity.

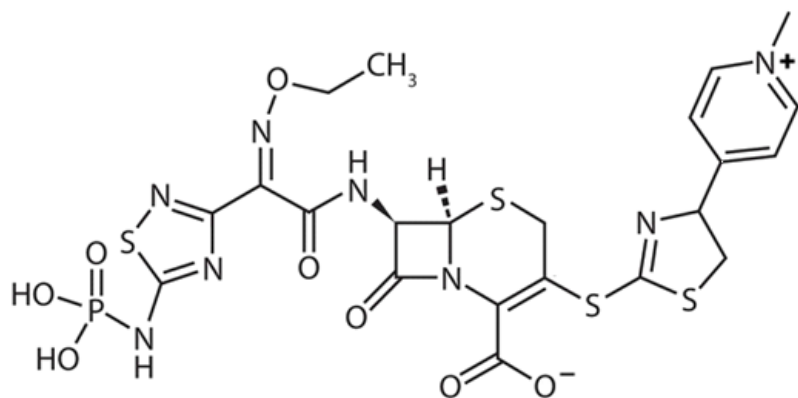
7 Is the given compound aromatic? Explain briefly.



- A) Yes, because it is cyclic, with $(4n + 2)$ electrons in contiguous p orbitals.
- B) No, because it does not have contiguous p orbitals.
- C) No, because it does not satisfy Hückel's Rule.
- D) No, because it cannot achieve planarity.

8

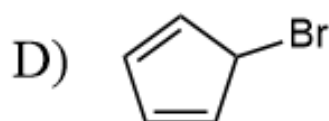
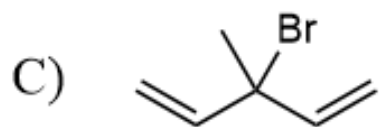
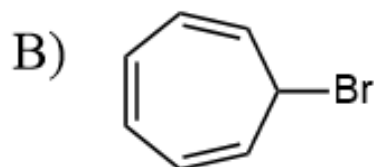
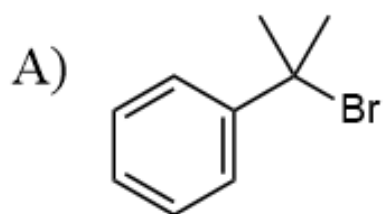
Shown below is ceftaroline (trade names Teflaro and Zinforo), an antibiotic drug that was introduced in 2010. By 2014, MRSA had mutated to develop resistance. Identify the aromatic ring(s) in ceftaroline.



How many aromatic rings are present in ceftaroline?

- A) 1 B) 2 C) 3 D) 4 E) 5

Of the following, which is LEAST likely to undergo an S_N1 reaction with ethanol?



Klein Ch. 17, ACS-style question

Draw *ortho*-nitrophenol.

