

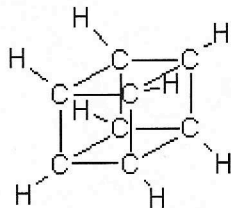
## Review Assignment Answer Section

### MODIFIED TRUE/FALSE

1. ANS: F, nonpolar
2. ANS: F, one way
3. ANS: T
4. ANS: T
5. ANS: F, relatively unreactive
6. ANS: F, propane
7. ANS: T
8. ANS: F, highest
9. ANS: F, cracking
10. ANS: T
11. ANS: F, but-1-ene
12. ANS: F, boiling points
13. ANS: F, Low-octane
14. ANS: T
15. ANS: F, excludes
16. ANS: F, Saturated
17. ANS: F, structural
18. ANS: F, Hydrogenation
19. ANS: F, alkenes
20. ANS: F, polar
21. ANS: F, lowest
22. ANS: F, Aliphatic
23. ANS: F, increases
24. ANS: T
25. ANS: F, carbon monoxide
26. ANS: F, alkanes

### SHORT ANSWER

1. ANS:



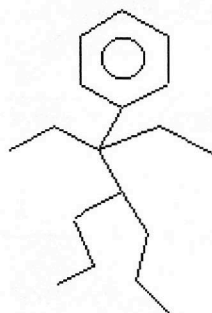
- exists as a cube
- angles between C-C bonds are only 90°
- bonding electrons are close together, so they tend to repel, making this molecule unstable
- bond strain is high

2. ANS:
- the benzene rings are eventually destroyed after exposure to the sun
  - delocalized electrons in the aromatic rings become excited and result in greater reactivity of the rings
  - slow degradation of the rings due to reactions causes the colour to fade

3. ANS:
- straight-chain alkanes are held together primarily by van der Waals forces
  - with only four carbon atoms, butane is very volatile, and easily becomes a gas when the lighter valve is opened
  - intermolecular forces are strong enough to keep butane as a liquid when inside the lighter

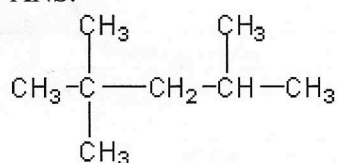
4. ANS:
- refiners could sell gasoline that contains hydrocarbons with lower average molecular mass and shorter carbon chains
  - longer carbon chains have higher boiling points, making them difficult to vaporize at low temperatures

5. ANS:



This figure resembles a stick man.

6. ANS:



7. ANS:

The graph has slight curve, as shown below.