

General Chemistry II Jasperse
 Intermolecular Forces, Ionic bond strength, Phase Diagrams, Heating Curves. Extra Practice Problems

Answers

1. 1-2-3-4 ($\text{Al}_2\text{S}_3 > \text{MgO} > \text{MgCl}_2 > \text{NaCl}$) Ion charge
2. 1-2-3-4-5 ($\text{LiF} > \text{NaF} > \text{NaCl} > \text{NaI} > \text{KI}$) (Ion size)
3. 3-5-4-1-2 ($\text{Fe}_3\text{N}_2 > \text{CaO} > \text{Na}_2\text{O} > \text{LiCl} > \text{NaBr}$) (Ion size first, then size as tiebreaker)
4. 1-2-3 ($\text{MgO} > \text{CaO} > \text{BaO}$)
5. b
6. a
7. b (this is for corrected version of question. Original version had a confusion factor included)
8. a
9. 1-2-3-4 ($\text{Mg}^{2+} > \text{Na}^+ > \text{H-Br} > \text{N}_2$)
10. d
11. Classify
 - a. Nonpolar
 - b. Polar
 - c. Nonpolar
 - d. Polar
 - e. Weakly polar
 - f. Polar
 - g. Polar
 - h. Polar
 - i. Nonpolar
 - j. Metal
 - k. Ionic
12. C
13. C
14. C
15. Classify
 - a. Molecular
 - b. Molecular
 - c. Network
 - d. Molecular
 - e. Network
 - f. Molecular
 - g. Molecular
 - h. Molecular
 - i. Network
 - j. Molecular
 - k. Network
 - l. Molecular
16. B
17. Which show a "hydrogen bond"

$-\text{O} \cdots \text{H}-\text{N}-$

$-\text{N} \cdots \text{H}-\text{N}-$
 $-\text{O} \cdots \text{H}-\text{O}-$

$-\text{O} \cdots \text{H}-\text{N}-$
18. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$, $\text{CH}_3\text{CH}_2\text{NH}_2$
19. C
20. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$
21. 3-2-1

22. 1-3-2-4 ($\text{Ca}(\text{OH})_2 > \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH} > \text{CH}_3\text{CH}_2\text{CH}_2\text{OH} > \text{CH}_3\text{CH}_2\text{OCH}_3$)
23. 4-3-1-2 ($\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3 > \text{CH}_3\text{CH}_2\text{OCH}_3 > \text{CH}_3\text{CH}_2\text{CH}_2\text{OH} > \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$)
24. 3-1-4-2 ($\text{LiCl} > \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{NH}_2 > \text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2 > \text{N}(\text{CH}_3)_3$)
25. e
26. b
27. a
28. b
29. c
30. d
31. b
32. d
33. e
34. a, d, and e are all true.
35. c
36. Y-X-W-Z
37. B
38. A
39. About 0.5 atm
40. About 1.5 atm
41. Melt
42. Sublime
43. C
44. d
45. e-c-a-b-d
46.
 a. solid
 b. solid + liquid
 c. liquid
 d. liquid + gas
 e. gas