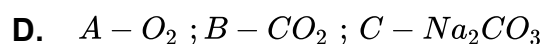
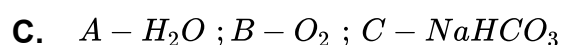
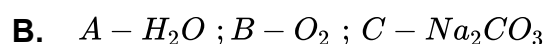


The s-Block Elements & The p-Block Elements

1. Find A, B and C in the following reactions $NH_3 + A + CO_2 \rightarrow (NH_4)CO_3$
 $(NH_4)_2CO_3 + B \rightarrow CaCO_3 \downarrow + 2NH_4Cl$
 $NH_4HCO_3 + NaCl \rightarrow NH_4Cl + C$



2. Given below are two statements:

Statement I ; Both $CaCl_2 \cdot 6H_2O$ and $MgCl_2 \cdot 8H_2O$ undergo dehydration on heating.

Statement II : BeO is amphoteric whereas the oxides of other elements in the same group are acidic.

In the light of the above statements, choose the correct answer from the options given below.

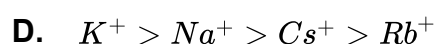
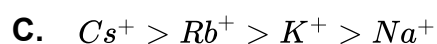
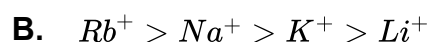
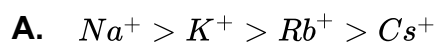
A. Statement I is false but statement II is true

B. Both statement I and statement II are true

C. Both statement I and statement II are false

D. Statement I is true but statement II is false

3. The correct order of conductivity of ions in water is



The s-Block Elements & The p-Block Elements

4. One of the by-products formed during the recovery of NH_3 from solvay process is

- A. $CaCl_2$
- B. $Ca(OH)_2$
- C. $NaHCO_3$
- D. NH_4Cl

5. Match List -I with List-II.

List I	List II
(a) $Ca(OCl)_2$	(i) Antacid
(b) $CaSO_4 \cdot \frac{1}{2}H_2O$	(ii) Cement
(c) CaO	(iii) Bleaching powder
(d) $CaCO_3$	(iv) Plaster of paris

Choose the most appropriate answer from the option given below.

- A. (a) - (iii), (b) - (ii), (c) - (i), (d) - (iv)
- B. (a) - (iii), (b) - (ii), (c) - (iv), (d) - (i)
- C. (a) - (iii), (b) - (iv), (c) - (ii), (d) - (i)
- D. (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii)

The s-Block Elements & The p-Block Elements

6. A s-block element (M) reacts with oxygen to form an oxide of the formula MO_2 . The oxide is pale yellow in colour and paramagnetic. The element (M) is

- A. K
- B. Na
- C. Mg
- D. Ca

7. Match List-I with List-II :

List-I	List-II
Elements	Properties
(a) Li	(i) Poor water solubility of I^-
(b) Na	(ii) Most abundant element in cell fluid
(c) K	(iii) Bicarbonate salt used in fire extinguisher
(d) Cs	(iv) Carbonate salt decomposes easily on heating

Choose the correct answer from the options given below :

- A. (a) - (i), (b) - (iii), (c) - (ii), (d) - (iv)
- B. (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv)
- C. (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)
- D. (a) - (iv), (b) - (ii), (c) - (iii), (d) - (i)

The s-Block Elements & The p-Block Elements

8. Given below are two statements : One is labelled as *Assertion A* and the other is labelled as *Reason R*.

Assertion A : Lithium halides are some what covalent in nature.

Reason R : Lithium possess high polarisation capability.

In the light of the above statements, choose the most appropriate answer from the options given below

- A.** *A* is false but *R* is true
 - B.** Both *A* and *R* true but *R* is NOT the correct explanation of *A*
 - C.** *A* is true but *R* is false
 - D.** Both *A* and *R* are true and *R* is the correct explanation of *A*
9. The set of elements that differ in diagonal relationship from those of the other sets is
- A.** B - Si
 - B.** Li - Na
 - C.** Be - Al
 - D.** Li - Mg

The s-Block Elements & The p-Block Elements

10. Match List-I with List -II :

List-I	List-II
(a) Li	(i) Photoelectric cell
(b) Na	(ii) Absorbent of CO_2
(c) K	(iii) Coolant in fast breeder nuclear reactor
(d) Cs	(iv) Treatment of cancer
	(v) Bearings for motor engines

Choose the correct answer from the options given below :

- A. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
 - B. (a)-(v), (b)-(iii), (c)-(ii), (d)-(i)
 - C. (a)-(v), (b)-(i), (c)-(ii), (d)-(iv)
 - D. (a)-(v), (b)-(ii), (c)-(iv), (d)-(i)
11. Given below are two statements :

Statement I : None of the alkaline earth metal hydroxides dissolve in alkali.

Statement II : Solubility of alkaline earth metal hydroxides in water increases down the group.

In the light of the above statements, choose the most appropriate answer from the options given below.

- A. Statement I and Statement II both are correct
- B. Statement I and Statement II both are incorrect
- C. Statement I is incorrect but Statement II is correct
- D. Statement I is correct but Statement II is incorrect

The s-Block Elements & The p-Block Elements

12. Match List -I with List -II:

	List -I		List -II
(a)	Be	(i)	treatment of cancer
(b)	Mg	(ii)	extraction of metals
(c)	Ca	(iii)	incendiary bombs and signals
(d)	Ra	(iv)	windows of X-ray tubes
		(v)	bearing for motor engines

Choose the most appropriate answer from the option given below.

- A.** (a) - (iii), (b) - (iv), (c) - (ii), (d) - (v)
- B.** (a) - (iv), (b) - (iii), (c) - (i), (d) - (ii)
- C.** (a) - (iii), (b) - (iv), (c) - (v), (d) - (ii)
- D.** (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)

13. Match List -I and List -II

	List - I (Elements)		List - II (Properties)
(a)	Ba	(i)	Organic solvent soluble compounds
(b)	Ca	(ii)	Outer electronic configuration $6s^2$
(c)	Li	(iii)	Oxalate insoluble in water
(d)	Na	(iv)	Formation of very strong monoacidic base

Choose the correct answer from the options given below:

- A.** (a) - (iii), (b) - (ii), (c) - (iv) and (d) - (i)
- B.** (a) - (ii), (b) - (iii), (c) - (i) and (d) - (iv)
- C.** (a) - (i), (b) - (iv), (c) - (ii) and (d) - (iii)
- D.** (a) - (iv), (b) - (i), (c) - (ii) and (d) - (iii)

The s-Block Elements & The p-Block Elements

14. Water does not produce CO on reacting with:

- A. C
- B. CH_4
- C. CO_2
- D. C_3H_8

15. The correct order of bond dissociation enthalpy of halogens is:

- A. $Cl_2 > Br_2 > F_2 > I_2$
- B. $F_2 > Cl_2 > Br_2 > I_2$
- C. $Cl_2 > F_2 > Br_2 > I_2$
- D. $I_2 > Br_2 > Cl_2 > F_2$

16. The incorrect statement regarding the structure of C_{60} is

- A. It contains 12 six-membered rings and 24 five-membered rings
- B. The six-membered rings are fused to both six and five-membered rings
- C. Each carbon atom forms three sigma bonds
- D. The five-membered rings are fused only to six-membered rings

The s-Block Elements & The p-Block Elements

17. Given below are the statements about diborane.
- (a) Diborane is prepared by the oxidation of $NaBH_4$ with I_2 .
 - (b) Each boron atom is in sp^2 hybridized state.
 - (c) Diborane has one bridged 3 centre-2-electron bond.
 - (d) Diborane is a planar molecule.

The option with correct statement(s) is :

- A.** (c) only
 - B.** (a) and (b) only
 - C.** (c) and (d) only
 - D.** (a) only
18. Which one of the following compounds of Groups-14 elements is not known?
- A.** $[GeCl_6]^{2-}$
 - B.** $[SiF_6]^{2-}$
 - C.** $[Sn(OH)_6]^{2-}$
 - D.** $[SiCl_6]^{2-}$

The s-Block Elements & The p-Block Elements

19. Match List-I with List-II

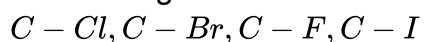
List-I	List-II
(a) $NaOH$	(i) Acidic
(b) $Be(OH)_2$	(ii) Basic
(c) $Ca(OH)_2$	(iii) Amphoteric
(d) $B(OH)_3$	
(e) $Al(OH)_3$	

Choose the most appropriate answer from the options given below :

- A.** (a)-(ii), (b)-(ii), (c)-(iii), (d)-(i), (e)-(iii)
- B.** (a)-(ii), (b)-(ii), (c)-(iii), (d)-(ii), (e)-(iii)
- C.** (a)-(ii), (b)-(i), (c)-(ii), (d)-(iii), (e)-(iii)
- D.** (a)-(ii), (b)-(iii), (c)-(ii), (d)-(i), (e)-(iii)
20. In which one of the following molecules strongest back donation of an electron pair from halide to boron is expected?

- A.** BBr_3
- B.** BCl_3
- C.** BI_3
- D.** BF_3

21. Arrange the following bonds according to their average bond energies in descending order:



- A.** $C - Cl > C - Br > C - I > C - F$
- B.** $C - Br > C - I > C - Cl > C - F$
- C.** $C - I > C - Br > C - Cl > C - F$
- D.** $C - F > C - Cl > C - Br > C - I$

The s-Block Elements & The p-Block Elements

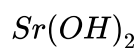
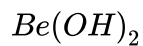
22. The reaction of $H_3N_3B_3Cl_3$ (A) with $LiBH_4$ in tetrahydrofuran gives inorganic benzene (B). Further, the reaction of (A) with (C) leads to $H_3N_3B_3(Me)_3$. Compounds (B) and (C) respectively, are:
- Boron nitride and $MeBr$
 - Borazine and $MeMgBr$
 - Borazine and $MeBr$
 - Diborane and $MeMgBr$
23. The correct statements among I to III regarding group 13 elements oxide are:
- Boron trioxide is acidic
 - Oxides of aluminium and gallium are amphoteric
 - Oxides of indium and thallium are basic.
- (I), (II) and (III)
 - (II) and (III) only
 - (I) and (III) only
 - (I) and (II) only
24. Diborane (B_2H_6) reacts independently with O_2 and H_2O to produce:
- HBO_2 and H_3BO_3
 - H_3BO_3 and B_2O_3
 - B_2O_3 and H_3BO_3
 - B_2O_3 and $[BH_4]^-$

The s-Block Elements & The p-Block Elements

25. The hydride that is not electron deficient is:
- A. B_2H_6
 - B. AlH_3
 - C. SiH_4
 - D. GaH_3
26. The relative stability of +1 oxidation state of group 13 element follows the order :
- A. $Al < Ga < Tl < In$
 - B. $Tl < In < Ga < Al$
 - C. $Al < Ga < In < Tl$
 - D. $Ga < Al < In < Tl$
27. The electronegativity of aluminium is similar to :
- A. Boron
 - B. Carbon
 - C. Lithium
 - D. Beryllium
28. The set in which compounds have different nature is :
- A. $B(OH)_3$ and H_3PO_3
 - B. $B(OH)_3$ and $Al(OH)_3$
 - C. $Be(OH)_2$ and $Al(OH)_3$
 - D. $NaOH$ and $Ca(OH)_2$

The s-Block Elements & The p-Block Elements

29. Number of amphoteric compounds among the following is _____.



30. Among the following, number of metal/s which can be used as electrodes in the photoelectric cell is _____ (Integer answer)

