

Questions with Answer Keys

MathonGo

Q1 (20 July 2021 Shift 1)

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:

- (1) Mg
- (2) Na
- (3) Ca
- (4) K

Q2 (20 July 2021 Shift 2)

Metallic sodium does not react normally with :

- (1) gaseous ammonia
- (2) But-2-yne
- (3) Ethyne
- (4) tert-butyl alcohol

Q3 (22 July 2021 Shift 1)

Match List-I with 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:

- (1) (a)-(ii), (b)-(iii), (c)-(i) and (d)-(iv)
- (2) (a)-(iv), (b)-(i), (c)-(ii) and (d)-(iii)

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(3) (a)-(iii), (b)-(ii), (c)-(iv) and (d)-(i)

(4) (a)-(i), (b)-(iv), (c)-(ii) and (d)-(iii)

Q4 (25 July 2021 Shift 1)

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

(1) Statement I is correct but Statement II is incorrect.

(2) Statement I is incorrect but Statement II is correct.

(3) Statement I and Statement II both are incorrect.

(4) Statement I and Statement II both are correct.

Q5 (25 July 2021 Shift 2)

Match List I with List II :

	List-I Elements		List-II Properties
(a)	Li	(i)	Poor water solubility of Γ salt
(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 :

(1) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

(2) (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)

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(3) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

(4) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

Q6 (27 July 2021 Shift 2)

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

(1) (a) - (v), (b) - (i), (c) - (ii), (d) - (iv)

(2) (a) - (v), (b) - (ii), (c) - (iv), (d) - (i)

(3) (a) - (iv), (b) - (iii), (c) - (i), (d) - (ii)

(4) (a) - (v), (b) - (iii), (c) - (ii), (d) - (i)

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Answer Key

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Q1 (4)

Q2 (2)

Q3 (1)

Q4 (2)

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Q5 (1)

Q6 (4)

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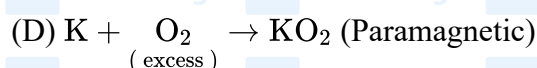
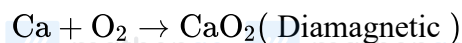
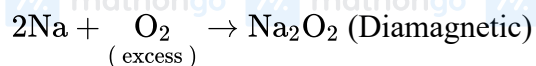
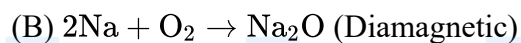
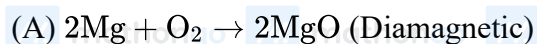
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Hints and Solutions

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Q1



Q2

Metallic sodium does not react with 2-butyne because 2-butyne does not have acidic hydrogen.

Q3

(a) 'Ba' having outer electronic configuration $6s^2$.(b) CaC_2O_4 is water insoluble

(c) 'Li' is soluble in organic solvents

(d) NaOH is strong Monoacidic base among given.

Q4

Statement-I is incorrect

 $\text{Be}(\text{OH})_2$ dissolve in alkali due to it's amphoteric

nature.

Statement-II is correct Solubility of alkaline earth metal hydroxide in water increases down the group due to rapid decreases in lattice energy as compared to hydration energy.

Q5

(a) C_5I salt is poor water soluble due to it's low hydration energy(b) NaHCO_3 is used in fire extinguisher

Hints and Solutions

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(c) K is most abundant element in cell fluid

(d) Li_2CO_3 decomposes easily due to high covalent character caused by small size Li^+ cation.

Q6

Li makes alloy with Lead to make white metal bearings for motor engines Liquid Na metal is used as coolant in fast breeder

nuclear reactor

K is a very absorbent of CO_2 Cs is used in making photoelectric cell