

PYQSide

NEET CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES — PYQS

Max. Marks: 168

Questions: 42

Section A (MCQ)

Q.1 The correct order of increasing metallic character of Na, Be, P, Mg and Si is : [NEET (UG) 2026]

- (1) $\text{Be} < \text{Si} < \text{P} < \text{Mg} < \text{Na}$
- (2) $\text{P} < \text{Si} < \text{Na} < \text{Mg} < \text{Be}$
- (3) $\text{P} < \text{Si} < \text{Be} < \text{Mg} < \text{Na}$
- (4) $\text{P} < \text{Mg} < \text{Be} < \text{Si} < \text{Na}$

Scan or tap for the full solution



Q.2 Identify the incorrect statement from the following: [NEET (UG) 2026]

- (1) The largest and the smallest species among Mg , Mg^{2+} , Al and Al^{3+} are Al and Mg^{2+} , respectively.
- (2) The IUPAC name of the element with atomic number 107 is Unnilseptium.
- (3) The similarity in behaviour of Li with Mg is referred to as 'diagonal relationship'.
- (4) The oxidation state and covalency of Al in $[\text{AlCl}(\text{H}_2\text{O})_5]^{2+}$ are 3 and 6 respectively.

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Q.3 Among the following options, the correct trend in the electron gain enthalpy is [RE-NEET (UG) 2026]

- (1) $\text{I} > \text{Br} > \text{Cl} > \text{F}$
- (2) $\text{F} > \text{Cl} > \text{Br} > \text{I}$
- (3) $\text{Br} > \text{Cl} > \text{F} > \text{I}$
- (4) $\text{Cl} > \text{F} > \text{Br} > \text{I}$

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Q.4 Given below are two statements: One is labelled as **Assertion A** and the other is labelled as **Reason R**.

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

Assertion (A): The first ionization enthalpy of O is lower than that of N and F .

Reason (R): The loss of an electron from O leads to stable half-filled p orbital [RE-NEET (UG) 2026]

- (1) A is not correct but R is correct
- (2) Both A and R are correct and R is the correct explanation of A
- (3) Both A and R are correct and R is NOT the correct explanation of A
- (4) A is correct but R is not correct.

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Q.5 Which of the following statements are true?

- A. Unlike Ga that has a very high melting point, Cs has a very low melting point.
- B. On Pauling scale, the electronegativity values of N and Cl are not the same.
- C. Ar , K^+ , Cl^- , Ca^{2+} , and S^{2-} are all isoelectronic species.
- D. The correct order of the first ionization enthalpies of Na , Mg , Al , and Si is $\text{Si} > \text{Al} > \text{Mg} > \text{Na}$.
- E. The atomic radius of Cs is greater than that of Li and Rb .

Choose the correct answer from the options given below :

[NEET (UG) 2025]

- (1) C and D only
- (2) A, C, and E only
- (3) A, B, and E only
- (4) C and E only

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Q.6 Which among the following electronic configurations belong to main group elements?

- A. $[\text{Ne}]3s^1$
- B. $[\text{Ar}]3d^34s^2$
- C. $[\text{Kr}]4d^{10}5s^25p^5$
- D. $[\text{Ar}]3d^{10}4s^1$
- E. $[\text{Rn}]5f^06d^27s^2$

Choose the correct answer from the option given below :

[NEET (UG) 2025]

- (1) D and E only
- (2) A, C and D only
- (3) B and E only
- (4) A and C only

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Q.7 Arrange the following elements in increasing order of first ionization enthalpy: Li , Be , B , C , N

Choose the correct answer from the options given below:

[NEET (UG) 2024]

- (1) $\text{Li} < \text{Be} < \text{B} < \text{C} < \text{N}$ (2) $\text{Li} < \text{B} < \text{Be} < \text{C} < \text{N}$
 (3) $\text{Li} < \text{Be} < \text{C} < \text{B} < \text{N}$ (4) $\text{Li} < \text{Be} < \text{N} < \text{B} < \text{C}$

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Q.8 Arrange the following elements in increasing order of electronegativity:

N, O, F, C, Si

Choose the correct answer from the options given below :

[NEET (UG) 2024]

- (1) $\text{Si} < \text{C} < \text{N} < \text{O} < \text{F}$ (2) $\text{Si} < \text{C} < \text{O} < \text{N} < \text{F}$
 (3) $\text{O} < \text{F} < \text{N} < \text{C} < \text{Si}$ (4) $\text{F} < \text{O} < \text{N} < \text{C} < \text{Si}$

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Q.9 The correct decreasing order of atomic radii (pm) of Li, Be, B and C is

[RE-NEET (UG) 2024]

- (1) $\text{Be} > \text{Li} > \text{B} > \text{C}$ (2) $\text{Li} > \text{Be} > \text{B} > \text{C}$
 (3) $\text{C} > \text{B} > \text{Be} > \text{Li}$ (4) $\text{Li} > \text{C} > \text{Be} > \text{B}$

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Q.10 Match List I with List II:

List - I (Block/group in periodic table)		List - II (Element)	
A.	Lanthanoid	I.	Ce
B.	d-block element	II.	As
C.	p-block element	III.	Cs
D.	s-block element	IV.	Mn

Choose the correct answer from the options given below:

[RE-NEET (UG) 2024]

- (1) A-I, B-II, C-IV, D-III (2) A-I, B-IV, C-III, D-II
 (3) A-I, B-IV, C-II, D-III (4) A-IV, B-I, C-II, D-III

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Q.11 The element expected to form largest ion to achieve the nearest noble gas configuration is

[NEET (UG) 2023]

- (1) F (2) N (3) Na (4) O

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Q.12 The IUPAC name of an element with atomic number 119 is

[NEET (UG) 2022]

- (1) ununennium (2) unnilennium
 (3) unununnium (4) ununoctium

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Q.13 The correct order of first ionization enthalpy for the given four elements is :

[NEET (UG) 2022 (Phase 2)]

- (1) $\text{C} < \text{F} < \text{N} < \text{O}$ (2) $\text{C} < \text{N} < \text{F} < \text{O}$
 (3) $\text{C} < \text{N} < \text{O} < \text{F}$ (4) $\text{C} < \text{O} < \text{N} < \text{F}$

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Q.14 If first ionization enthalpies of elements X and Y are 419 kJ mol^{-1} and 590 kJ mol^{-1} , respectively and second ionization enthalpies of X and Y are 3069 kJ mol^{-1} and 1145 kJ mol^{-1} , respectively. Then correct statement is :

[NEET (UG) 2022 (Phase 2)]

- (1) Both X and Y are alkaline earth metals
 (2) X is an alkali metal and Y is an alkaline earth metal
 (3) X is an alkaline earth metal and Y is an alkali metal
 (4) Both X and Y are alkali metals

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Q.15 Identify the incorrect match.

[NEET (UG) 2020]

Name		IUPAC Official Name	
a.	Unnilunium	i.	Mendelevium
b.	Unniltrium	ii.	Lawrencium
c.	Unnilhexium	iii.	Seaborgium
d.	Unununium	iv.	Darmstadtium

- (1) (b)-(ii) (2) (c)-(iii) (3) (d)-(iv) (4) (a)-(i)

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Q.16 Match the following :

Which of the following is correct option?

[NEET (UG) 2020]

Oxide		Nature	
A.	CO	i.	Basic
B.	BaO	ii.	Neutral
C.	Al_2O_3	iii.	Acidic
D.	Cl_2O_7	iv.	Amphoteric

- (1) (A)-(ii), (B)-(i), (C)-(iv), (D)-(iii)
 (2) (A)-(iii), (B)-(iv), (C)-(i), (D)-(ii)
 (3) (A)-(iv), (B)-(iii), (C)-(ii), (D)-(i)
 (4) (A)-(i), (B)-(ii), (C)-(iii), (D)-(iv)

Scan or tap for the full solution



Q.17 For the second period elements the correct increasing order of first ionization enthalpy is :

[NEET (UG) 2019]

- (1) $\text{Li} < \text{B} < \text{Be} < \text{C} < \text{N} < \text{O} < \text{F} < \text{Ne}$
 (2) $\text{Li} < \text{Be} < \text{B} < \text{C} < \text{O} < \text{N} < \text{F} < \text{Ne}$
 (3) $\text{Li} < \text{B} < \text{Be} < \text{C} < \text{O} < \text{N} < \text{F} < \text{Ne}$
 (4) $\text{Li} < \text{Be} < \text{B} < \text{C} < \text{N} < \text{O} < \text{F} < \text{Ne}$

Scan or tap for the full solution



Q.18 The element $Z = 114$ has been discovered recently. It will belong to which of the following family/group and electronic configuration ?

[NEET 2017]

- (1) Carbon family, $[\text{Rn}] 5f^{14} 6d^{10} 7s^2 7p^2$
 (2) Oxygen family, $[\text{Rn}] 5f^{14} 6d^{10} 7s^2 7p^4$
 (3) Nitrogen family, $[\text{Rn}] 5f^{14} 6d^{10} 7s^2 7p^6$
 (4) Halogen family, $[\text{Rn}] 5f^{14} 6d^{10} 7s^2 7p^5$

Scan or tap for the full solution



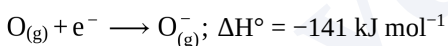
Q.19 In which of the following options the order of arrangement does not agree with the variation of property indicated against it ? [NEET 2016 (Phase 1)]

- (1) $\text{I} < \text{Br} < \text{Cl} < \text{F}$ (increasing electron gain enthalpy)
 (2) $\text{Li} < \text{Na} < \text{K} < \text{Rb}$ (increasing metallic radius)
 (3) $\text{Al}^{3+} < \text{Mg}^{2+} < \text{Na}^+ < \text{F}^-$ (increasing ionic size)
 (4) $\text{B} < \text{C} < \text{N} < \text{O}$ (increasing first ionisation enthalpy)

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Q.20 The formation of the oxide ion, $\text{O}_{(\text{g})}^{2-}$ from oxygen atom requires first an exothermic and then an endothermic step as shown below:



Thus, process of formation of O^{2-} in gas phase is unfavourable even though O^{2-} is isoelectronic with neon. It is due to the fact that, [AIPMT 2015]

- (1) O^- ion has comparatively smaller size than oxygen atom
 (2) oxygen is more electronegative
 (3) addition of electron in oxygen results in larger size of the ion
 (4) electron repulsion outweighs the stability gained by achieving noble gas configuration.

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Q.21 The species Ar , K^+ and Ca^{2+} contain the same number of electrons. In which order do their radii increase ? [AIPMT 2015 (Cancelled)]

- (1) $\text{Ca}^{2+} < \text{K}^+ < \text{Ar}$ (2) $\text{K}^+ < \text{Ar} < \text{Ca}^{2+}$
 (3) $\text{Ar} < \text{K}^+ < \text{Ca}^{2+}$ (4) $\text{Ca}^{2+} < \text{Ar} < \text{K}^+$

Scan or tap for the full solution



Q.22 Which of the following orders of ionic radii is correctly represented? [AIPMT 2014]

- (1) $\text{H}^- > \text{H} \cdot > \text{H}^+$ (2) $\text{Na}^+ > \text{F}^- > \text{O}^{2-}$
 (3) $\text{F}^- > \text{O}^{2-} > \text{Na}^+$ (4) $\text{Al}^{3+} > \text{Mg}^{2+} > \text{N}^{3-}$

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Q.23 Which one of the following arrangements represents the correct order of least negative to most negative electron gain enthalpy for C, Ca, Al, F and O? [NEET 2013 (Karnataka)]

- (1) $\text{Al} < \text{Ca} < \text{O} < \text{C} < \text{F}$ (2) $\text{Al} < \text{O} < \text{C} < \text{Ca} < \text{F}$
 (3) $\text{C} < \text{F} < \text{O} < \text{Al} < \text{Ca}$ (4) $\text{Ca} < \text{Al} < \text{C} < \text{O} < \text{F}$

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Q.24 Identify the wrong statement in the following.

[AIPMT 2012 (Prelims)]

- (1) Amongst isoelectronic species, smaller the positive charge on the cation, smaller is the ionic radius.
 (2) Amongst isoelectronic species, greater the negative charge on the anion, larger is the ionic radius.
 (3) Atomic radius of the elements increases as one moves down the first group of the periodic table.
 (4) Atomic radius of the elements decreases as one moves across from left to right in the 2nd period of the periodic table.

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Q.25 What is the value of electron gain enthalpy of Na^+ if IE_1 of $\text{Na} = 5.1 \text{ eV}$? [AIPMT 2011 (Mains)]

- (1) -5.1 eV (2) -10.2 eV
 (3) $+2.55 \text{ eV}$ (4) $+10.2 \text{ eV}$

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Q.26 Which of the following oxide is amphoteric? [AIPMT 2011 (Mains)]

- (1) SnO_2 (2) CaO (3) SiO_2 (4) CO_2

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Q.27 Among the elements Ca, Mg, P and Cl, the order of increasing atomic radii is [AIPMT 2010 (Mains)]

- (1) $\text{Mg} < \text{Ca} < \text{Cl} < \text{P}$ (2) $\text{Cl} < \text{P} < \text{Mg} < \text{Ca}$
 (3) $\text{P} < \text{Cl} < \text{Ca} < \text{Mg}$ (4) $\text{Ca} < \text{Mg} < \text{P} < \text{Cl}$



Q.28 Among the following which one has the highest cation to anion size ratio? [AIPMT 2010 (Mains)]

- (1) CsI (2) CsF (3) LiF (4) NaF



Q.29 The correct order of the decreasing ionic radii among the following isoelectronic species is

- [AIPMT 2010 (Prelims)]
 (1) $\text{Ca}^{2+} > \text{K}^+ > \text{S}^{2-} > \text{Cl}^-$ (2) $\text{Cl}^- > \text{S}^{2-} > \text{Ca}^{2+} > \text{K}^+$
 (3) $\text{S}^{2-} > \text{Cl}^- > \text{K}^+ > \text{Ca}^{2+}$ (4) $\text{K}^+ > \text{Ca}^{2+} > \text{Cl}^- > \text{S}^{2-}$



Q.30 Which of the following represents the correct order of increasing electron gain enthalpy with negative sign for the elements O, S, F and Cl?

- [AIPMT 2010 (Prelims)]
 (1) $\text{Cl} < \text{F} < \text{O} < \text{S}$ (2) $\text{O} < \text{S} < \text{F} < \text{Cl}$
 (3) $\text{F} < \text{S} < \text{O} < \text{Cl}$ (4) $\text{S} < \text{O} < \text{Cl} < \text{F}$



Q.31 Amongst the elements with following electronic configurations, which one of them may have the highest ionisation energy? [AIPMT 2009]

- (1) $[\text{Ne}] 3s^2 3p^2$ (2) $[\text{Ar}] 3d^{10} 4s^2 4p^3$
 (3) $[\text{Ne}] 3s^2 3p^1$ (4) $[\text{Ne}] 3s^2 3p^3$



Q.32 Identify the correct order of the size of the following: [AIPMT 2007]

- (1) $\text{Ca}^{2+} < \text{K}^+ < \text{Ar} < \text{Cl}^- < \text{S}^{2-}$
 (2) $\text{Ar} < \text{Ca}^{2+} < \text{K}^+ < \text{Cl}^- < \text{S}^{2-}$
 (3) $\text{Ca}^{2+} < \text{Ar} < \text{K}^+ < \text{Cl}^- < \text{S}^{2-}$
 (4) $\text{Ca}^{2+} < \text{K}^+ < \text{Ar} < \text{S}^{2-} < \text{Cl}^-$



Q.33 With which of the following electronic configuration an atom has the lowest ionisation enthalpy? [AIPMT 2007]

- (1) $1s^2 2s^2 2p^3$ (2) $1s^2 2s^2 2p^6 3s^1$
 (3) $1s^2 2s^2 2p^6$ (4) $1s^2 2s^2 2p^5$



Q.34 Which of the following is the most basic oxide?

[AIPMT 2006]

- (1) SeO_2 (2) Al_2O_3 (3) Sb_2O_3 (4) Bi_2O_3



Q.35 Which one of the following arrangements represents the correct order of electron gain enthalpy (with negative sign) of the given atomic species?

[AIPMT 2005]

- (1) $\text{S} < \text{O} < \text{Cl} < \text{F}$ (2) $\text{Cl} < \text{F} < \text{S} < \text{O}$
 (3) $\text{F} < \text{Cl} < \text{O} < \text{S}$ (4) $\text{O} < \text{S} < \text{F} < \text{Cl}$



Q.36 A nuclide of an alkaline earth metal undergoes radioactive decay by emission of three α -particles in succession. The group of the periodic table to which the resulting daughter element would belong is

[AIPMT 2005]

- (1) Gr. 13 (2) Gr. 17 (3) Gr. 14 (4) Gr. 16



Q.37 Ionic radii are

[AIPMT 2004]

- (1) inversely proportional to effective nuclear charge
 (2) inversely proportional to square of effective nuclear charge
 (3) directly proportional to effective nuclear charge
 (4) directly proportional to square of effective nuclear charge.



Q.38 The ions O^{2-} , F^- , Na^+ , Mg^{2+} and Al^{3+} are isoelectronic. Their ionic radii show [AIPMT 2003]

- (1) a significant increase from O^{2-} to Al^{3+}
 (2) a significant decrease from O^{2-} to Al^{3+}
 (3) an increase from O^{2-} to F^- and then decrease from Na^+ to Al^{3+}
 (4) a decrease from O^{2-} to F^- and then increase from Na^+ to Al^{3+}



Q.39 Which of the following is isoelectronic?

[AIPMT 2002]

- (1) CO_2 , NO_2 (2) NO_2^- , CO_2
 (3) CN^- , CO (4) SO_2 , CO_2



Q.40 Which of the following order is wrong?

[AIPMT 2002]

- (1) $\text{NH}_3 < \text{PH}_3 < \text{AsH}_3$ – acidic
 (2) $\text{Li} < \text{Be} < \text{B} < \text{C}$ – 1st IP
 (3) $\text{Al}_2\text{O}_3 < \text{MgO} < \text{Na}_2\text{O} < \text{K}_2\text{O}$ – basic
 (4) $\text{Li}^+ < \text{Na}^+ < \text{K}^+ < \text{Cs}^+$ – ionic radius

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full solution



- Q.41** An atom has electronic configuration $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3 4s^2$, you will place it in which group? [AIPMT 2002]
 (1) fifth (2) fifteenth (3) second (4) third

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full solution



- Q.42** Correct order of 1st ionization potential among following elements Be, B, C, N, O is [AIPMT 2001]
 (1) $\text{B} < \text{Be} < \text{C} < \text{O} < \text{N}$ (2) $\text{B} < \text{Be} < \text{C} < \text{N} < \text{O}$
 (3) $\text{Be} < \text{B} < \text{C} < \text{N} < \text{O}$ (4) $\text{Be} < \text{B} < \text{C} < \text{O} < \text{N}$

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ANSWER KEY

Ques.	1	2	3	4	5	6	7
Ans.	3	1	4	2	4	4	2
Ques.	8	9	10	11	12	13	14
Ans.	1	2	3	2	1	4	2
Ques.	15	16	17	18	19	20	21
Ans.	3	1	3	1	1, 4	4	1
Ques.	22	23	24	25	26	27	28
Ans.	1	4	1	1	1	2	2
Ques.	29	30	31	32	33	34	35
Ans.	3	2	4	1	2	4	4
Ques.	36	37	38	39	40	41	42
Ans.	3	1	2	3	2	1	1