



Roll No. of Candidate

Name of Candidate

**STARS ENTRY TEST SYSTEM-2021****(PMC -MDCAT)****(CHEMISTRY)**

Test Code: C-6 (s &amp; p Block Elements + Transition Elements)

Time Allowed: 50 min

- When elements of group II-A (alkaline earth metals) are exposed to air, they quickly become coated with a layer of oxide. What purpose does this oxide layer serve?  
(A) The oxide layer exposes the metal to Atmospheric attack  
(B) The oxide layer increases the reactivity of metal  
(C) The oxide layer protects the metal from further atmospheric attack  
(D) The oxide layer gives the metal a shiny silvery appearance
- Ionic radius along the period decreases due to:  
(A) Addition of a new shell  
(B) High Ionization energy  
(C) Increase in nuclear charge  
(D) Decrease in nuclear charge
- Among the following, which one is least reactive metal:  
(A) Mg  
(B) Ca  
(C) Na  
(D) Be
- Which of the following species require least amount of energy to remove one electron:  
(A) Ne  
(B) Mg  
(C) Na  
(D) Al
- Which of the following is isoelectronic with carbon atom?  
(A)  $\text{Na}^+$   
(B)  $\text{O}^{2-}$   
(C)  $\text{Al}^{+3}$   
(D)  $\text{N}^+$
- Most of the known elements are metals of \_\_\_\_\_ of periodic table.  
(A) d - block  
(B) p - block  
(C) IIIA - group  
(D) Zero block
- The lowest ionization energies are found in the \_\_\_\_\_  
(A) Inert gases  
(B) Alkali metals  
(C) Transition elements  
(D) Halogens
- \_\_\_\_\_ ion has the largest radius.  
(A)  $\text{Al}^{+3}$   
(B)  $\text{Cl}^{-1}$   
(C)  $\text{F}^{-1}$   
(D)  $\text{O}^{-2}$
- Highest ionization potential is shown by:  
(A) Alkali metals  
(B) Halogen  
(C) Transition elements  
(D) Alkaline earth metals
- Which of the following pair represents elements of group VA:  
(A) A = 6 and B = 14  
(B) A = 7 and B = 15  
(C) A = 10 and B = 18  
(D) A = 11 and B = 17
- End of a period marks:  
(A) Start of s-subshell  
(B) Completion of s-subshell  
(C) Completion of p-subshell  
(D) Start of d-subshell
- The highest metallic character out of the following is of:  
(A) Be  
(B) Mg  
(C) B  
(D) Al
- Which electronic configuration represents an element of group VIA:  
(A)  $ns^2np^3$   
(B)  $ns^2np^5$   
(C)  $ns^2np^4$   
(D)  $ns^2np^6$
- d-block and f-block elements are collectively called:  
(A) Non-typical transition element  
(B) Outer transition elements  
(C) Normal transition elements  
(D) transition elements
- A group that contains non-typical transition elements:  
(A) Zn, Cd, Hg  
(B) Fe, Ru, Os  
(C) Cr, Mo, W  
(D) Mn, Te, Re



16. In Cu an electron from 4s goes to 3d this is due to the stability associated with \_\_\_\_\_ orbital  
(A) Half (C) Completely  
(B) Partially (D) Quarterly
17.  $\text{Sc}^{+2}$  has lost electrons  
(A) 1 from 4s, 1 from 3d (C) 2 from 3d  
(B) 2 from 4s (D) 2 from 3p
18. The most common oxidation state of transition elements arises due to  
(A) 3s electrons (C) 4s electrons  
(B) 3p electrons (D) 3d electrons
19. The minimum oxidation state of Sc is:  
(A) +1 (C) +2  
(B) +3 (D) +4
20. A transition element X, in +3 oxidation state has the same electronic configuration as that of Ar. The element is  
(A) Ti (C) Sc  
(B) V (D) Cr
21. The atomic size of transition elements decreases from Sc to Cr due to:  
(A) Unpaired electrons increase  
(B) Paired electrons decrease  
(C) Poor shielding of 3d-subshell  
(D) Strong shielding of 3d-subshell
22.  $\text{Ti}^{+4}$  has:  
(A) Zero unpaired electrons (C) Three unpaired electrons  
(B) Five unpaired electrons (D) One paired electrons
23. What is true for the order of filling of orbitals.  
(A) 3p is filled after 4s (C) 4s is filled prior to 3d  
(B) 3s is filled after 3p (D) 3d is filled before 4s
24. Vanadium cannot show oxidation number  
(A) +3 (C) +7  
(B) +5 (D) +1
25. d-orbitals of transition elements in complexes are:  
(A) unstable (C) degenerate  
(B) highly stable (D) non-degenerate
26. Common oxidation states of Cu are  
(A) +1 only (C) +2 only  
(B) +1 and +2 (D) +2 and +3
27. An atom that has high metallic character shows:  
(A) Tendency to form positive ions (C) High ionization potential  
(B) Small atomic size (D) High electron affinity
28. The property which shows increasing trend upto the middle of periodic table and then a decreasing trend across the periods (left to right):  
(A) Ionization energy (C) Melting point  
(B) Electronegativity (D) Atomic radius
29. The element which shows maximum electrical conductivity among the following is:  
(A) Diamond (C) N  
(B) Au (D) Si
30. The element with atomic number 10 belongs to \_\_\_\_\_ group and \_\_\_\_\_ block:  
(A) IA, s (C) IIIA, p  
(B) VIIIA, p (D) IVA, s
31. The majority elements of s and d block are:  
(A) Metals (C) Non metals  
(B) Metalloids (D) Transition metals
32. Which of the following has maximum first ionization potential  
(A) Cl (C) Ar  
(B) P (D) Mg
33. Sodium does not lose second electron easily because after removal of first electron:  
(A) IE decreases (C) Valence shell is lost  
(B) Atomic size increases (D) nuclear charge increases
34. Which of the following property remains same in a period:  
(A) Ionization energy (C) Atomic Number  
(B) Electron affinity (D) Shielding effect
35. While moving down the group in the periodic table, which of the following will increase:  
(A) Number of valence electrons (C) Electronegativity  
(B) No. of shells (D) No. of valence shells
36. Moving across a period the nature of oxides changes from  
(A) acidic to basic to amphoteric (C) basic to acidic to amphoteric  
(B) acidic to basic (D) basic to amphoteric to acidic



37. Higher the number of valence electrons in a representative element, greater will be its  
 (A) Melting point (C) Atomic size  
 (B) Ionization energy (D) Boiling point
38. Which metal of IIA does not react with  $H_2O$ ?  
 (A) Be (C) Mg  
 (B) Ca (D) Sr
39. Ionization energy of Calcium is.  
 (A) Lower than that of Barium (C) Higher than that of Beryllium  
 (B) Lower than that of Magnesium (D) Lower than that of Strontium
40. In which group of periodic table is the element which has atomic number 14.  
 (A) IA (C) VA  
 (B) IVA (D) VIA
41. Consider the ion pairs listed below, indicate for which pair does the second ion has a larger ionic radius than the first one.  
 (A)  $Na^+$ ,  $Mg^{+2}$  (C)  $Br^-$ ,  $Cl^-$   
 (B)  $Cs^+$ ,  $K^+$  (D)  $Cl^-$ ,  $S^{-2}$
42. Second ionization potential of alkali metals are very high as:  
 (A) These are s-block elements (C) they obtain inert gas configurations  
 (B) they have  $ns^2$  electronic configuration (D) They are metals
43. Element A of group III A combines with an element B of group VI A. the resulting compound may have formula:  
 (A)  $A_2B_3$  (C)  $A_3B_2$   
 (B)  $A_5B_6$  (D)  $A_6B_5$
44. The strength of binding energy of transition elements depends upon:  
 (A) Number of electron pairs (C) Number of neutrons  
 (B) Number of unpaired electrons (D) Number of protons
45. Least number of unpaired electrons are found in  
 (A) Zn (C) Cu  
 (B) Sc (D) Ni
46.  $[Ti(H_2O)_6]^{3+}$  has 3d electrons  
 (A) 2 (C) 3  
 (B) 1 (D) 4
47. The number of unpaired electrons present in  $Mn^{2+}$  ion is  
 (A) 1 (C) 2  
 (B) 5 (D) 0
48. A property of non-typical transition element is that it?  
 (A) It is a liquid (C) does not show colored complexes  
 (B) it belongs to p-block (D) it has no 3d electrons
49. The correct order of radii is:  
 (A)  $Li < Na < K < Ca$  (C)  $Li < Be < Na < Mg$   
 (B)  $N < B < Be < H$  (D)  $S < P < Si < Al$
50. An element shows a sudden large difference between the values of third and fourth ionization energies which of the following can be the electronic configuration of this element:  
 (A)  $1s^2, 2s^2, 2p^5$  (C)  $1s^2, 2s^2, 2p^6, 3s^2, 3p^1$   
 (B)  $1s^2, 2s^2, 2p^6, 3s^2$  (D)  $1s^2, 2s^2, 2p^6, 3s^2, 3p^6$



# SUBJECT

✓1	A	B	●	D
✓2	A	B	●	D
✓3	A	B	C	●
✓4	A	B	●	D
✓5	A	B	C	●
✓6	●	B	C	D
✓7	A	●	C	D
✗8	A	●	C	●
✓9	A	●	C	D
✓10	A	●	C	D
✓11	A	B	●	D
✗12	A	●	C	●
✓13	A	B	●	D
✓14	A	B	C	●
✓15	●	B	C	D
✓16	A	●	C	●
✓17	A	●	C	D
✓18	A	B	●	D
✓19	A	B	●	D
✓20	A	B	●	D

✓21	A	B	●	D
✓22	●	B	C	D
✓23	A	B	●	D
✓24	A	B	●	D
✗25	A	B	●	●
✓26	A	●	C	D
✓27	●	B	C	D
✓28	A	B	●	D
✓29	A	●	C	D
✓30	A	●	C	D
✓31	●	B	C	D
✓32	A	B	●	D
✓33	A	B	C	●
✓34	A	B	C	●
✓35	A	●	C	D
✓36	A	B	C	●
✓37	A	●	C	D
✓38	●	B	C	D
✓39	A	●	C	D
✓40	A	●	C	D

✓41	A	B	C	●
✓42	A	B	●	D
✓43	●	B	C	D
✓44	A	●	C	D
✓45	●	B	C	D
✓46	A	●	C	D
✓47	A	●	C	D
✓48	A	B	●	D
✓49	A	B	C	●
✓50	A	B	●	D
51	A	B	C	D
52	A	B	C	D
53	A	B	C	D
54	A	B	C	D
55	A	B	C	D
56	A	B	C	D
57	A	B	C	D
58	A	B	C	D
59	A	B	C	D
60	A	B	C	D

- U
- F
- E
- D
- M
- P
- T
- A