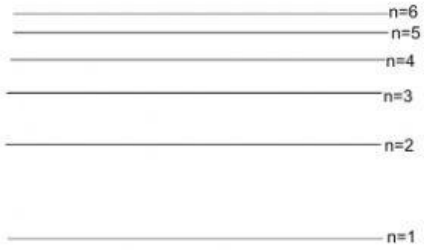
12. How many electronic transitions between the following energy levels would be expected for Lyman and Paschen series?



	Lyman Series	Paschen Series
A.	5	3
B.	5	2
C.	4	3
D.	5	4

13. Calculate the wavelength in nm of the second line in Lyman series.

A. 1.026×10^{-16} nm

B. 1.026×10^{2} nm

C. 9.75×10^{6} nm

D. 975×10^{-3} nm

14. Q is an element with proton number of 21. Write the electronic configuration of Q.

A. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2$

B. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^1$

C. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^1$

D. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^1$

15. Give a set of quantum numbers for the electrons that occupy the fourth shell in Scandium (Sc).

A. n= 3, l=1, m=0, s=+1

B. n= 3, l=1, m=1, s= - ½

C. n=4, l=0, m=1, s= +½

D. n=4, l=0, m=0, s= - ½

16. Given the set of quantum number for the highest energy electron in atom X.

n=4, l=1, m=0, s= +½

Write the electronic configuration of X.

A. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^{10}\ 4p^2$

B. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^{10}\ 4p^{21}$

C. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^{10}\ 4p^1$

D. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 4p^1$

17. Give a set of quantum number of one valence electron in the *s* orbital of arsenic, As.

A. n=4, l =0, m= 1, s = -½

B. n=4, l=1, m=0, s= +1

C. n=4, l= 0, m= 0, s= -1

D. n=4, l=0, m=0, s= -½

18. The proton number of copper (Cu) is 29. Write the valence electronic configuration of the copper atom.

A. $4s^2\ 3d^{10}$ C. $4s^2\ 3d^8$

B. $4s^1\ 3d^{10}$ D. $3d^{10}\ 4s^2$

19. Nickel has 28 protons. Give a set of possible quantum number for the electron with the highest energy in Ni^{2+} ion.

A. n=3 l =2 m= -1 s= -1/2
B. n=3 l =1 m=-1 s= +1/2
C. n=4 l =0 m=-1 s= +1/2
D. n=4 l =0 m=0 s= -1/2

20. Ion that have the similar electronic configuration with $_{10}Ne$ is;

A. O^{2+} C. N^{3-}

B. Mg^{2+} D. Cl^-