

20. Which of the following vapours produce yellow light in street lamps ? ( )  
A) Sodium      B) Calcium  
C) Potassium    D) Cesium

21. Who modified Bohr's atomic model by adding elliptical orbits ? ( )  
A) Sommerfeld    B) Lande  
C) Goudsmit      D) Uhlenbeck

22. Which of the following is defined as the range of wavelengths covering red colour to violet colour ? ( )  
A) Electromagnetic spectrum  
B) Absorption spectrum  
C) Visible spectrum  
D) All of these

23. Which of the following is responsible to rule out the existence of definite paths of trajectories of electrons ? ( )  
A) Pauli's exclusion principle  
B) Hund's rule  
C) Heisenberg uncertainty principle  
D) Aufbau's rule

24. Total number of orbitals associated with third shell will be ( )  
A) 2      B) 4  
C) 9      D) 3

25. Orbital angular momentum depends upon  
A)  $l$       B)  $n$  and  $l$  ( )  
C)  $n$  and  $m$     D)  $m$  and  $s$

26. Which of the following shells has less energy ?  
A) L      B) M ( )  
C) K      D) N

27. Bohr's atomic model explains spectrum of  
A) H      B)  $\text{He}^+$  ( )  
C)  $\text{Li}^{+2}$     D) All

28. Speed of light is ( )  
A)  $3 \times 10^8$  cm/sec    B)  $3 \times 10^8$  m/sec  
C)  $3 \times 10^{10}$  m/sec    D)  $3 \times 10^{10}$  cm/sec

29. Which colour has lower energy ? ( )  
A) violet      B) blue  
C) green      D) red

30. How many elliptical orbits are possible for a given  $n = 6$  value ? ( )  
A) 4      B) 3  
C) 5      D) 7

31. Which of the following has least energy ?  
A) 3s      B) 4p ( )  
C) 5s      D) 6s

32. Which of the following has highest energy ?  
A) 4s      B) 3p ( )  
C) 3d      D) 4p

33. Who modified Bohr's theory by introducing elliptical orbits for electron path ?  
A) Rutherford    B) Thomson ( )  
C) Sommerfeld    D) Hund

34. Which of the following electronic configuration corresponds to an inert gas ? ( )  
A)  $1s^2 2s^2 2p^5$     B)  $1s^2 2s^2 2p^6$   
C)  $1s^2 2s^2 2p^6 3s^1$     D) None of these

35. According to Aufbau principle, the electron has a tendency to occupy the orbital which has  
A) Highest energy  
B) Lowest energy  
C) Nearly equal energy  
D) None of these

36. The magnetic quantum number ( $m$ ) for the outermost electron in sodium atom is ( )  
A) 0      B) +1  
C) -1      D) -2

37. The maximum number of electrons that can be accommodated in all the orbitals for which  $l = 3$  is ? ( )  
A) 6      B) 10  
C) 14      D) 18