ATOMIC STRUCTURE

SINGLE CORRECT OPTION TYPE

1. Number of protons present in $_{58}Ce^{142}$ is

   a) 58 b) 84 c) 26 d) 142

2. In a neutral atom, the number of electrons and protons are

   a) equal b) may or may not be equal

   c) in $1:2$ ratio d) can't be predicted

3. Proton was discovered by

   a) J.J. Thomson b) Chadwick c) Goldstein d) Rutherford

4. Neutron was discovered by

   a) J.J.Thomson b) Goldstein c) Chadwick d) Crookes

5. Which of the following is a characteristic of an element?

   a) atomic number b) mass number

   c) number of neutrons d) none of the above

6. The number of electrons, protons and neutrons present in $_{13}Al^{27}$ respectively

   a) 13, 13, 13 b) 13, 14, 15 c) 13, 13, 14 d) 13, 13, 27

7. The charge of an electron is

   a) $-1.6\times10^{-19}C$ b) $9.1\times10^{-31}C$ c) $-4.8\times10^{-10}e.s.u.$ d) both 'a' and 'c'

8. Which of the following statements is incorrect?

   a) the magnitude of charge of electron and proton is equal

   b) electron and proton has same mass

   c) proton and neutron has nearly same mass

   d) proton has positive charge

9. Which of the following pairs does not have same number of neutrons?

   a) $_7N^{14}, _8O^{16}$ b) $_9F^{19}, _{10}Ne^{20}$ c) $_{11}Na^{23}, _{12}Mg^{24}$ d) $_{15}P^{31}, _{16}S^{32}$

10. Which of the following pairs does not represent isobar?

    a) $_{19}K^{40}, _{18}Ar^{40}$ b) $_2He^3, _2He^4$ c) $_{12}Mg^{24}, _{12}Mg^{25}$ d) both 'b' and 'c'

11. W X Y Z are 4 elements. Which among them are related to each other as isotopes.

    $_{91}W^{230}$ $_{92}X^{235}$ $_{93}Y^{236}$ $_{92}Z^{238}$

    a) $_{92}X^{235}$, $_{92}Z^{238}$ b) $_{91}W^{230}$, $_{92}Z^{238}$ c) $_{92}Z^{238}$, $_{93}Y^{230}$ d) $_{91}W^{230}$, $_{92}Z^{238}$

12. Electronic configuration of sulphur ion $\left(S^{2-}\right)$ is

    a) 2 8 6 b) 2 8 4 c) 2 8 8 d) 2 8 10

13. Which of the following pairs are not isoelectronic

    a) CH_4, N^{3-} b) O_2^{2-}, Ar c) CO, N_2 d) K^+, F^-

14. Bromine exist as two natural isotopes $_{35}Br^{79}$ and $_{35}Br^{81}$. Percentage abundance of Br-79 is 10% and Br-81 is 90%. Find average mass of Br.

a) 80.8 b) 80.1 c) 80 d) 80.3

15. Boron exist as two naturally existing isotopes. $_5B^9$,$_5B^{12}$. The average atomic weight of Boron is 10.9. Calculate the % abundance of the isotopes respectively

a) 40%, 60% b) 36%, 64% c) 36.67%, 63.33% d) 40.22%, 59.78%

MULTI CORRECT OPTION TYPE

16. The charge of proton is

a) $1.620\times10^{-19}C$ b) $1.602\times10^{-21}C$ c) $4.8\times10^{-10}esu$ d) $4.8\times10^{-15}esu$

17. The mass of proton is

a) $1.67\times10^{-27}kg$ b) $1.67\times10^{-24}g$ c) 1.0072 amu d) none of these

18. Which of the following is/are isotopes?

a) $_8O^{16}$,$_8O^{17}$ b) $_1H^1$,$_1H^2$ c) $_2He^3$,$_2He^4$ d) none of these

19. Nucleus of an atom consist of

a) electrons b) protons c) neutrons d) both 'a' and 'c'

20. Which of the following atoms have six neutrons?

a) $_7N^{14}$ b) $_4Be^9$ c) $_6C^{12}$ d) $_5B^{11}$

PARAGRAPH TYPE

Atomic number is the number of protons in the nucleus of an atom. It is also the number of electrons present in neutral atom of an element mass number is the sum of number of protons and neutrons present in the nucleus of an atom. We can find the number of neutrons by using the formula $A-Z$ where A is mass number and Z is the atomic number.

21. The atomic mass of Lead is 208 and its atomic number is 82. The atomic mass of bismuth is 209 and its atomic number is 83. The ratio of neutron/protons number in the atom.

a) higher of Pb b) higher of Bi c) same d) none of these

22. If three neutrons are added to the nuclei of $_{92}U^{235}$ the new particle have an atomic number of

a) 89 b) 95 c) 90 d) 92

23. Nitrogen has atomic number 7 and oxygen has atomic number 8. The total number of electrons in NO_3^- ion is

a) 15 b) 32 c) 31 d) 46

24. What is the ratio between the number of neutrons of $_6C^{12}$ & $_{14}Si^{28}$

a) $1:2$ b) $3:7$ c) $4:3$ d) $6:7$

25. How many electrons and protons are present in ClO_3^- ion. Atomic Number of $Cl=17$ and $O=8$

a) $15p\,16e$ b) $21p\,22e$ c) $41p\,42e$ d) $31p\,32e$

FILL IN THE BLANKS

26. Electron, Proton and Neutron are collectively called as _____.
27. The number of neutrons present in $_{19}K^{39}$ is _____.
28. Protons and neutrons are collectively called _____.
29. 2Na represents _____ of sodium.
30. The number of electrons present in the outer most shell of an atom is called _____.

MATRIX MATCH

	Column I			Column II
1)	Isotopes	[ ]	A)	$1.675\times10^{27}\,Kg$
2)	Isobars	[ ]	B)	$_{19}K^{39}$,$_{20}Ca^{40}$
3)	Isotones	[ ]	C)	$_{14}Si^{28}$, $_{14}Si^{29}$, $_{14}Si^{30}$
4)	Charge of electron	[ ]	D)	$_{18}Ar^{40}$, $_{20}Ca^{40}$
5)	Mass of neutron	[ ]	E)	$-1.602\times10^{19}C$

KEY

1. A	**2. A**	**3. C**	**4. C**	**5. A**	**6. C**	**7. D**	**8. B**	**9. A**	**10. D**
11. A	**12. C**	**13. D**	**14. A**	**15. C**	**16. A,C**	**17. A,B,C**	**18. A,B,C**	**19. B,C**	**20. C,D**
21. A	**22. D**	**23. B**	**24. B**	**25. C**					
26. Fundamental particles			**27. 20**			**28. nucleons**			
29. two sodium atoms			**30. valence electrons**						
1-C; 2-D; 3-B; 4-E; 5-A									

wish you all the best