**Reg. NO:**

**TIME: 45 MIN**

**DATE: 4.4.2020**

**ATOMIC STRUCTURE-KEY- HINTSAND SOLUTIONS**

**SUBJECT: CHEMISTRY**

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| **-: ATOMIC STRUCTURE** **-HINTS AND SOLUTIONS :-** |

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| : ATOMIC STRUCTURE - ANSWER KEY | | | | | | | |
| 1) | **c** | **2)** | **b** | **3)** | **d** | **4)** | **c** |
| 5) | **b** | **6)** | **c** | **7)** | **c** | **8)** | **c** |
| 9) | **a** | **10)** | **a** | **11)** | **c** | **12)** | **d** |
| 13) | **a** | **14)** | **a** | **15)** | **c** | **16)** | **c** |
| 17) | **a** | **18)** | **c** | **19)** | **b** | **20)** | **a** |
| 21) | **c** | **22)** | **a** | **23)** | **d** | **24)** | **b** |
| 25) | **c** | **26)** | **b** | **27)** | **d** | **28)** | **d** |
| 29) | **c** | **30)** | **b** |  |  |  |  |

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| 1) | **(c) Conceptual** |
| 3 | **(d)**  Spins of an electron are in an orbital |
| 4 | **(c)**  No. of subshell no. of orbitals . |
| 5 | **(b)**  No. of electrons in an orbital  No. of orbitals in a subshell  No. of electrons in an orbital |
| 6 | **(c)**  Mesons are electrically neutral or charged particles having their mass 236 times of electron. |
| 7 | **(c)**  [Zero unpaired electrons]  [One unpaired electrons]  [Five unpaired electrons]  [Two unpaired electrons] |
| 8 | **(c)**  According to Bohr’s atomic model, if energy is supplied to an electron it may jump from a lower energy level to higher energy level. Energy is absorbed in the form of quanta (or photon).  Where, is the frequency.  According to above postulate an electron from one Bohr stationary orbit can go to next higher orbit by the absorption of electromagnetic radiation of particular frequency. |
| 9 | **(a)**  Tritium is the isotope of hydrogen. Its composition is as follows :  1 electron, 1 proton and 2 neutrons |
| 10 | **(a)**  If (maximum), then (maximum). Thus, maximum value of Also no. of waves in an orbit no. of orbit |
| 11 | **(c)**  For Lyman series, |
| 12 | **(d)**  The desired formulae to calculate nodes. |
| 13 | **(a)** |
| 14 | **(a)**  In -orbitals electrons are present as |
| 15 | **(c)**  Rest all are evidence for wave nature. |
| 16 | **(c)**  Ground state of is . |
| 17 | **(a)**  Accelerating potential |
| 18 | **(c)**  So, deuterium and an -particles have identical value of |
| 19 | **(b)**  All the protons carrying charge are present in nucleus. |
| 20 | **(a)**  The has lower energy. |
| 21 | **(c)**  We know that kinetic energy  or  So, |
| 22 | **(a)**  At. wt. scale now-a-days is based on . |
| 23 | **(d)**  In the ground state the value of can be either zero or one.  Hence, the set (d) of quantum numbers .,  cannot possible in the ground state. |
| 24 | **(b)**  Six with as  and six with |
| 25 | **(c)**  To designate an orbital, are required. |
| 26 | **(b)**  Total values of for a given subshell . |
| 27 | **(d)**  has configuration for last electron. |
| 28 | **(d)**  The principle is valid only for sub-atomic particles. |
| 29 | **(c)**  Isotopes are atoms of same elements having different mass number  Isobars are atoms of different elements having same mass number.  Isotones are atoms of different elements having same number of neutrons.  Nuclear isomers are atoms with the same atomic number and same mass number but different radioactive properties. |
| 30 | **(b)**  B has configuration; is non-spherically shell. |