

f-BLOCK ELEMENTS, NUCLEAR CHEMISTRY & CO-ORDINATION COMPOUNDS

Std. XII
CHEMISTRY

Time: 30 mts
Max.Marks: 25

- Which is used in gas lamp material?
 - MnO_2
 - CeO_2
 - N_2O_5
 - Fe_2O_3
- Which forms Oxocations?
 - Actinides
 - Lanthanides
 - Inert gases
 - d-block element
- Which is used as a power source in long mission space probes?
 - U^{235}
 - U^{238}
 - Th^{237}
 - Pu^{238}
- The colour of U^{3+} ion is
 - yellow
 - green
 - red
 - colourless
- Thoria is used is
 - toys
 - tracer bullets
 - gas lamp materials
 - none of these
- Major constituent in mish metal is
 - La
 - Nb
 - Na
 - Ce
- The required temperature used to get the individual lanthanide metals is
 - 1270 K
 - 1720 K
 - 1170 K
 - 1520 K
- The most common oxidation state of actinides is
 - +4
 - +3
 - +5
 - +6
- Magnetic property of lanthanides and actinides are
 - Para, dia
 - para, para
 - para, ferro
 - dia, para
- An example of a chelating ligand is ____
 - NO_2^-
 - Chloro
 - Bromo
 - en
- An example of an ambidentate ligand is ____
 - CN^-
 - Cl^-
 - NO_2^-
 - Γ^-
- The coordination number of Ni (II) in $[\text{Ni}(\text{CN})_4]^{2-}$ is ____
 - 2
 - 4
 - 5
- A metal ion from the first transition series forms an octahedral complex with magnetic moment of 4.9 BM and another octahedral complex which is diamagnetic. The metal ion is ____
 - Fe^{2+}
 - Co^{2+}
 - Mn^{2+}
 - Ni^{2+}

14. Paramagnetic moment is represented in _____
 a Debye unit b K Joules c BM d ergs
15. A carbonyl ligand is _____ ligand.
 a positive b negative c neutral d ambidentant
16. The solution of the complex $[\text{Cu}(\text{NH}_3)_4] \text{SO}_4$ in water
 a will give tests for SO_4^{2-} ion b will give tests for Cu^{+2} ion
 c will give test for NH_3 d will not give tests for any of these
17. The most penetrating radiations are _____
 a α rays b β rays
 c γ rays d all are equalling penetrating
18. In the nuclear reaction ${}_{92}\text{U}^{238} \rightarrow {}_{82}\text{Pb}^{206}$, the number of α and β particles emitted are _____
 a 7α , 5β b 6α , 4β
 c 4α , 3β d 8α , 6β .
19. The reaction ${}_5\text{B}^8 \rightarrow {}_4\text{Be}^8$ takes place due to _____
 a α decay b β decay
 c electron capture d positron decay
20. Radioactivity is due to _____
 a Stable electronic configuration b Stable nucleus
 c Unstable nucleus d Unstable electronic configuration
21. Loss of a β -particle is equivalent to _____
 a increases of one proton only b decrease of one neutron only
 c both (a) and (b) d none of these
22. The mass number and charge of an α particle is _____
 a 4 and - 1 b 2 and 2 c 4 and 2 d 4 and - 2
23. In the reaction, ${}_3\text{Li}^7 + \text{Z} \rightarrow {}_4\text{Be}^7 + {}_0\text{n}^1$, the projectile, Z is _____
 a α particle b deuteron
 c neutron d proton
24. The source of solar energy is _____
 a Nuclear fusion reactions
 b nuclear fission reactions
 c radioactive decay
 d burning of gases present in the sun
25. The half life period of a radioactive element is 140 days. After 560 days, one gram of the element will be reduced to _____
 a $\frac{1}{2}$ g b $\frac{1}{4}$ g c $\frac{1}{8}$ g d $\frac{1}{16}$ g