



CHEMISTRY

NCERT - FULL MARKS

CHEMISTRY(TAMIL)

**TRANSITION AND INNER TRANSITION
ELEMENTS**

Evaluation Choose The Best Answer

1. Sc(Z=21) is a transition element but Zinc (z=30) is not because

A. both Sc^{3+} and Zn^{2+} ions are colourless and form white compounds.

B. in case of Sc, 3d orbital are partially filled but in Zn these are completely filled

C. last electron as assumed to be added to 4s level in case of zinc

D. both Sc and Zn do not exhibit variable oxidation states

Answer: B



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2. Which of the following d block element has half filled penultimate d sub shell as well as half filled valence sub shell?

A. Cr

B. Pd

C. Pt

D. none of these

Answer: A



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3. Among the transition metals of 3d series, the one that has highest negative (M^2Ce/M) and its standard electrode potential is $5d^26s^2$. As we move from Cerium

to other elements the additional electrons are progressively filled in 4f orbitals as shown in the table.

A. Ti

B. Cu

C. Mn

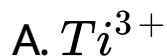
D. Zn

Answer: A



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4. Which one of the following ions has the same number of unpaired electrons as present in V^{3+} ?



Answer: C



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5. The magnetic moment of Mn^{2+} ion is

A. 5.92BM

B. 2.80BM

C. 8.95BM

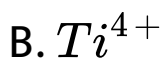
D. 3.90BM

Answer: A



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6. Which of the following compounds is colourless?



Answer: B



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7. the catalytic behaviour of transition metals and their compounds is ascribed mainly due to

A. their magnetic behaviour

B. their unfilled d orbitals

C. their ability to adopt variable oxidation states

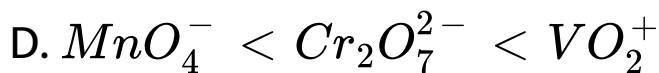
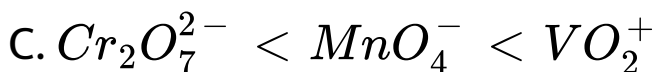
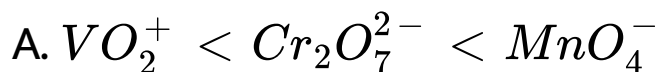
D. their chemical reactivity

Answer: C



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8. The correct order of increasing oxidizing power in the series



Answer: A



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9. The alloy of copper that contain Zinc is

A. Monel metal

B. Bronze

C. bell metal

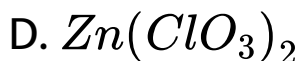
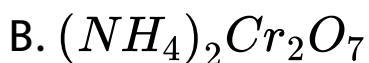
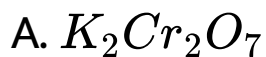
D. brass

Answer:



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10. Which of the following does not give oxygen on heating?



Answer: B



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11. In acid medium, potassium permanganate oxidizes oxalic acid to

A. oxalate

B. Carbon dioxide

C. acetate

D. acetic acid

Answer: B



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12. Which of the following statements is not true?

A. on passing H_2S , through acidified $K_2Cr_2O_7$ solution, a milky colour is observed

B. $Na_2Cr_2O_2$ is preferred over $K_2Cr_2O_7$ in volumetric analysis

C. $K_2Cr_2O_7$ solution in acidic medium is orange in colour

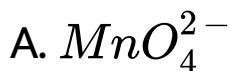
D. $K_2Cr_2O_7$ solution becomes yellow on increasing the P^H beyond 7

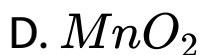
Answer: B



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13. Permanganate ion changes to _____ in acidic medium





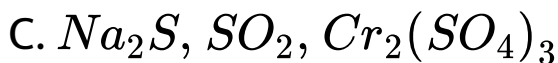
Answer: B



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14. A white crystalline salt (A) react with dilute HCl to liberate a suffocating gas (B) and also forms a yellow precipitate . The gas (B) turns potassium dichromate acidified with dil

H_2SO_4 to a green coloured solution(C). A,B and C are respectively

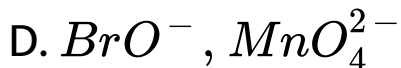
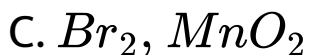
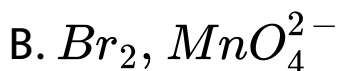
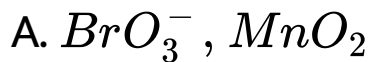


Answer: A



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15. MnO_4^- react with Br^- in alkaline P^H to give



Answer: A



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16. How many moles of I_2 are liberated when 1 mole of potassium dichromate react with potassium iodide?

A. 1

B. 2

C. 3

D. 4

Answer: C



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17. The number of moles of acidified $KMnO_4$ required to oxidize 1 mole of ferrous oxalate (FeC_2O_4) is

A. 5

B. 3

C. 0.6

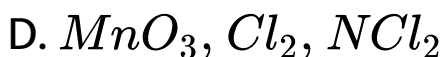
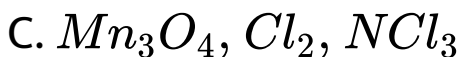
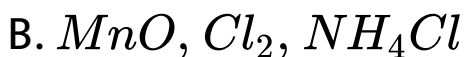
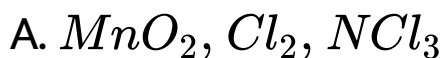
D. 1.5

Answer: C



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18. When a brown compound of Mn (A) is treated with HCl, it gives a gas (B). The gas (B) taken in excess reacts with NH₃ to give an explosive compound (C). The compound A, B and C are



Answer: A



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19. Which one of the following statements related to lanthanons is incorrect?

A. Europium shows +2 oxidation state.

B. The basicity decreases as the ionic radius decreases from Pr to Lu.

C. All the lanthanons are much more reactive than aluminium.

D. Ce^{4+} solutions are widely used as oxidising agents in volumetric analysis.

Answer: C



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20. Which of the following lanthanoid ions is diamagnetic?

A. Fu^{2+}

B. Yb^{2+}

C. None of these

D. $6m^2$

Answer: B



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21. Which of the following oxidation states is most common among the lanthanoids?

A. 4

B. 2

C. 5

D. 3

Answer: D



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22. Assertion : Ce^{4+} is used as an oxidizing agent in volumetric analysis. Reason: Ce^{4+} has the tendency of attaining +3 oxidation state.

A. Both assertion and reason are true and reason is the correct explanation of assertion.

B. Both assertion and reason are true but reason is not the correct explanation of assertion.

C. Assertion is true but reason is false.

D. Both assertion and reason are false.

Answer: A



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23. The most common oxidation state of actinoids is

A. + 2

B. + 3

C. + 4

D. + 6

Answer: C



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24. The actinoid elements which show the highest oxidation state of +7 are

A. Np, Pu, Am

B. U, Fm, Th

C. U, Th, Md

D. Es, No, Lr

Answer: A



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25. Which one of the following is not correct?

A. $La(OH)_2$ is less basic than $Lu(OH)_3$

B. In lanthanoid series ionic radius of Ln^{3+} ions decreases

C. La is actually an element of transition metal series rather than lanthanide series

D. Atomic radii of Zr and Hf are same because of lanthanide contraction

Answer: A



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