



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 102

Chemistry

1. Which of the following compounds contains no covalent bond(s)?

$NaCl$, PH_3 , O_2 , B_2H_6 , H_2SO_4 , $CaCl_2$

A. $NaCl, B_2H_6$

B. $NaCl, B_2H_6, PH_3$

C. $NaCl, H_2SO_4$

D. $NaCl, CaCl_2$

Answer: D



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2. For the reaction, $N_2O_4(g) \rightleftharpoons 2NO_2(g)$ the degree of dissociation at equilibrium is 0.14 at a pressure of 1 atm. The value of K_p is

A. 0.381 atm

B. 0.80 atm

C. 0.762 atm

D. 0.195 atm

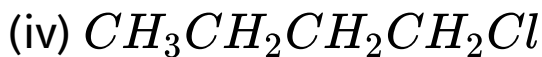
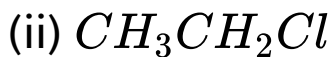
Answer: C



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3. Arrange the following compounds in decreasing order of their boiling points

(i) CH_3Cl



A. $(iii) > (iv) > (i) > (ii)$

B. $(iv) > (iii) > (ii) > (i)$

C. $(i) > (iii) > (ii) > (iv)$

D. $(i) > (ii) > (iii) > (iv)$

Answer: B



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4. Pick out the correct statement set for transition metals

1. They form interstitial compounds

2. 5d- elements have higher energies than 3d

4d - elements 4. They have low melting and boiling points (or low enthalpies of atomization)

A. 1, 2

B. 2, 3

C. 1, 2, 3

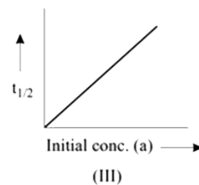
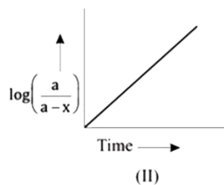
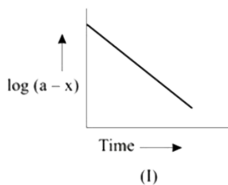
D. 1, 2, 3, 4

Answer: C



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5. Which of the following is/are correct for the first order reaction?



A. I, II

B. II, III

C. I, II III

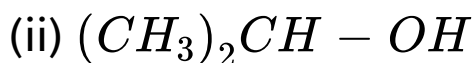
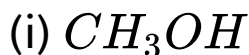
D. I, III

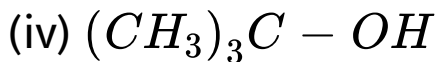
Answer: A



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6. Arrange the following alcohols in order of increasing reactivity towards sodium metal.





A. (iv) > (iii) > (ii) > (i)

B. (ii) < (i) < (iii) < (iv)

C. (iv) < (ii) < (iii) < (i)

D. (i) > (iii) > (ii) > (iv)

Answer: C



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7. Which of the following metal pairs on burning in moist air do not give smell of ammonia?

Mg, Ca, K, Li, Na, Al

A. *Mg, K*

B. *Ca, Na*

C. *K, Na*

D. *Li, Al*

Answer: C



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8. Which of the following set is having correct statements for enzyme catalyst?

1. Each enzyme is specific for a given reaction
2. the enzyme activity is maximum at optimum pH
3. The enzymatic activity is increased in presence of certain substances called co - enzymes
4. The favourable temperature range of enzyme activity is between $50 - 60^{\circ}C$

A. 1, 3

B. 2, 3

C. 1, 2, 3

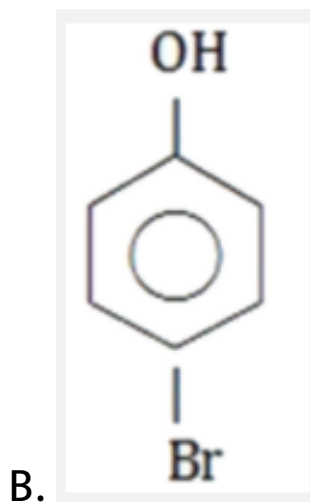
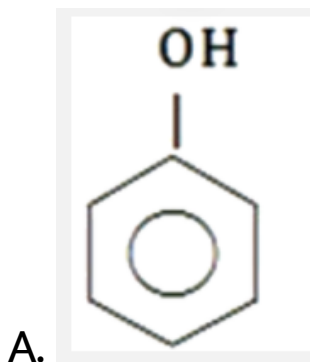
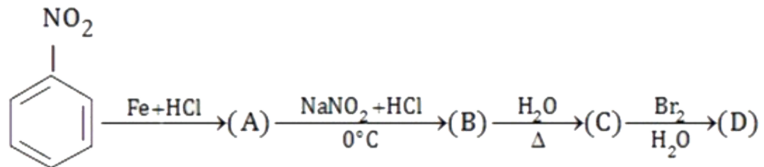
D. 1, 2, 3, 4

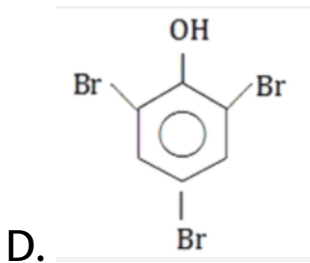
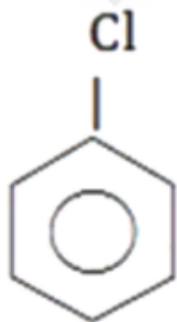
Answer: C



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9. Here in the given sequence of reaction the final product 'D' is





Answer: D



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10. Pick out the correct set of statements for HI.

1. It reduces iodic acid to I_2
2. It reduces H_2SO_4 to SO_2
3. It decolourises acidified $KMnO_4$
4. It liberates I_2 with $CuSO_4$ solution

A. 1, 2, 3

B. 1, 2, 4

C. 1, 3, 4

D. 1, 2, 3, 4

Answer: D



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11. Standard entropies of x_2 , y_2 and xy_3 are 70, 50 and $60 \text{ J K}^{-1} \text{ mol}^{-1}$ respectively. For

the reaction



to be at equilibrium, the temperature should be

A. 450 K

B. 600 K

C. 1200 K

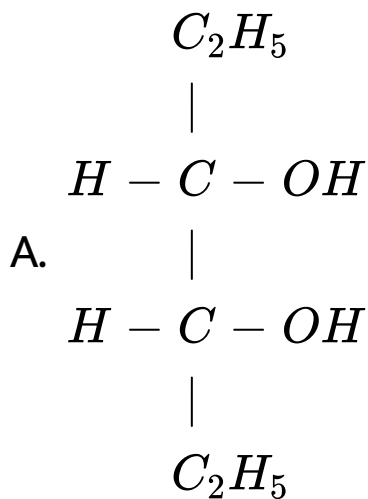
D. 300 K

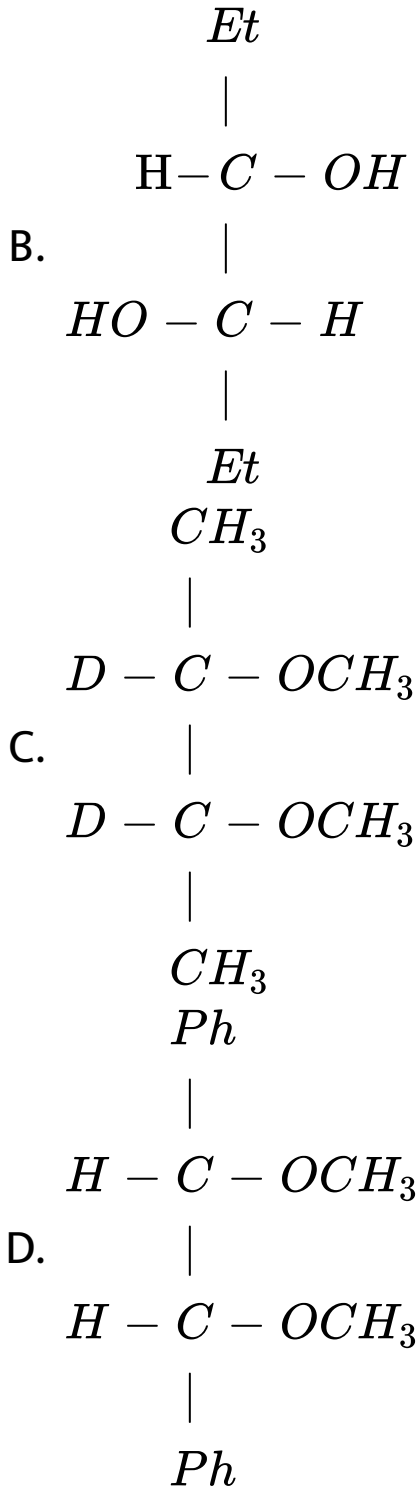
Answer: B



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12. Which one of the following compounds show optical activity ?





Answer: B



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13. In which of the following minerals, Al is present ?

1. Fluorspar
2. Mica
3. Feldspar
4. Cryolite

A. 1, 2, 3

B. 1, 2, 4

C. 2, 3, 4

D. 1, 2, 3, 4

Answer: C



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14. A crystalline solid of pure substance has a face - centred cubic structure with a cell edge of 400 pm. If the density of the substance in

the crystal is 8 g cm^{-3} , then the number of atoms present in 128 g of the crystal is

A. 2×10^{24}

B. 4×10^{24}

C. 1×10^{24}

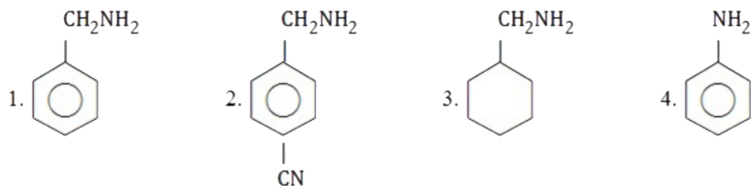
D. 3×10^{24}

Answer: C

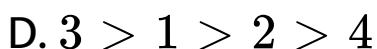
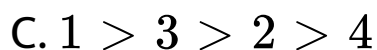
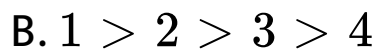
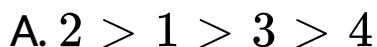


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15. Consider the following substances



The decreasing order of basicity is



Answer: D



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16. Which is/are correct statement(s) for XeF_2

?

A. It has bent structure

B. It is hydrolysed rapidly in aqueous solution of a base

C. It oxidizes Cl^- and I^- to Cl_2 and I_2 respectively

D. Both B and C

Answer: D



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17. Two glass bulbs x and y are connected by a very small tube having a stop - cock. Bulb X has a volume of 100cm^3 and contained the gas, while bulb Y was empty. On opening the stop - cock, the pressure fell down to 60%. The volume of the bulb Y must be

A. 132.32cm^3

B. 124cm^3

C. 66.66cm^3

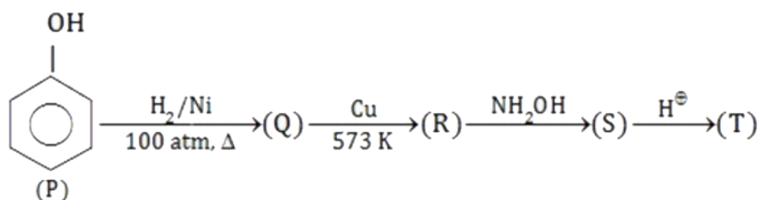
D. 150cm^3

Answer: C

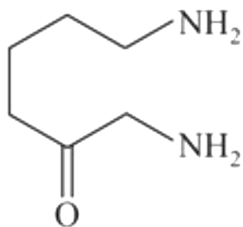


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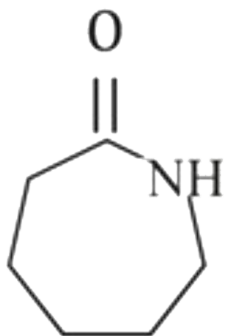
18. The final product (T) in the following reaction is



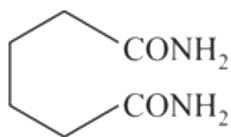
A.



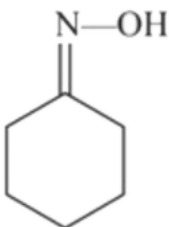
B.



C.



D.



Answer: B



19. Which of the following statements is incorrect?

(i) In octahedral complexes, t_{2g} orbitals possess low energy as compared to e_g orbitals

(ii) In octahedral complexes, e_g orbitals possess low energy as compared to t_{2g} orbitals

(iii) In tetrahedral complexes, t_{2g} orbitals possess high energy as compared to e_g orbitals

A. (ii) only

B. (iii) only

C. (i) and (ii)

D. (i) and (iii)

Answer: A



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20. At certain temperature, dissociation constant of formic acid and acetic acid are 1.8×10^{-4} and 1.8×10^{-5} respectively. At what concentration of acetic solution, the

H_3O^+ ion concentration is same as that in
0.001 M formic acid solution

A. 0.001 M

B. 0.01 M

C. 0.1 M

D. 0.0001 M

Answer: B



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21. In He^{\oplus} ion sample e^{-} is in ground state. If photon of energy 52.24 eV is given to the sample all the atom goes to higher energy state. It again falls back up to ground state. If it is not emitting any lines in Balmer series then what is the maximum possible number of spectral lines observed



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22. No. of $\alpha - H$ atoms in the product (alkene) formed when $(CH_3)_3CCH(OH)CH_3$ reacts with conc. H_2SO_4



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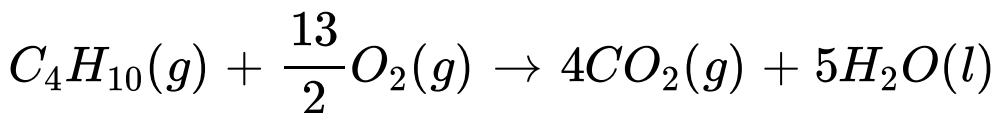
23. If the freezing point of a 0.01 molal aqueous solution of a cobalt (III) chloride-ammonia complex (which behaves as a strong electrolyte) is $-0.0558^\circ C$, the number of

chloride (s) in the coordination sphere of the complex if $[K_f \text{ of water} = 1.86 \text{Kkgmol}^{-1}]$



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24. A fuel cell involves combustion of the butane at 1 atm and 298 K



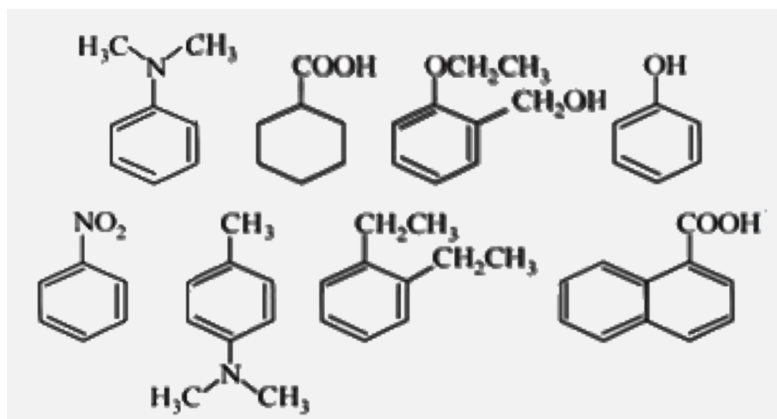
$$\Delta G^\circ = -2744 \text{ kJ/mole}$$

The value of E_{cell}° Report your answer by rounding it upto nearest whole number.



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25. If number of aldose, ketose, furanose and pyranose units present in maitose are p , q , r , s respectively. Find the value of $p + q + r + s$



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