CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 80

Chemistry

1. The electronic Geometry of XeO_2F_2 is

A. Triangular planar

B. Trigonal bipyramidal

C. Square planar

D. Tetrahedral

Answer: B

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2. What is the correct increasing order of electronegativity of the elements C, N, Si, P?

A. C, N, Si, P

B. N, Si, C, P

C. Si, P, C, N

D. P, Si, N, C

Answer: C

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3. Which of the following is most soluble?

A. $BaSO_4$

B. $MgSO_4$

C. $CaSO_4$

D. $BeSO_4$

Answer: D

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4. Which of the following is/are necessary condition for vapour phase refining.

(A) Used reagent should form volatile complex with metal

(B) Formed volatile complex should be non thermal decomposable.

A. Both A & B are correct

B. Only A is correct

C. Only B is correct

D. Both are incorrect

Answer: B

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5. When $BiCl_3$ reacts with excess of water, a white precipitate is produced which is.

A. $Bi(OH)_3$

B. Bi_2O_3

C. $BiOCl$

D. Bi_2Cl_3

Answer: C

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6. $[Pt(NH_3)(NH_2OH)(H_2O)(Py)]^+$ will form how many geometrical isomers :

A. 2

B. 3

C. 6

D. 5

Answer: B

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7. The decomposition temperature is maximum for:

A. $BeCO_3$

B. $CaCO_3$

C. K_2CO_3

D. Li_2CO_3

Answer: C

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8. Decarboxylation occurs with maximum rate in :

A. $C_6H_5CH_2COOH$

B. $CH_3 - \overset{\overset{O}{||}}{C} - CH_2 - CH_2 - COOH$

C. $CH_3 - \overset{\overset{O}{||}}{C} - CH_2 - COOH$

D. $Cl - CH_2 - CH_2 - CH_2 - COOH$

Answer: C

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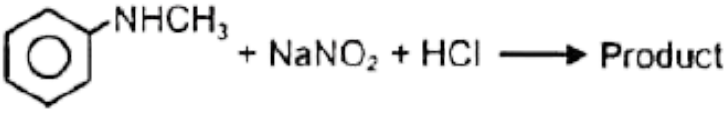
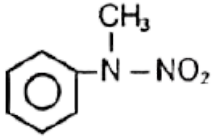
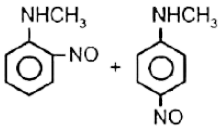
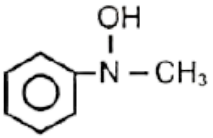
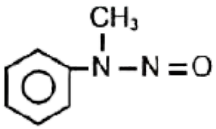
9. Identify the major product for the given below reaction (test for amines):



A. 

B. 

C. 

D. 

Answer: D

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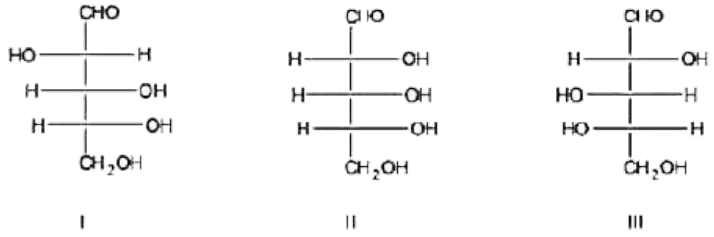
10. The correct statement about the compounds I, II and III :



A. II and III are epimers

B. I and II are epimers

C. I and III are diastereomers

D. I and III are identical

Answer: B

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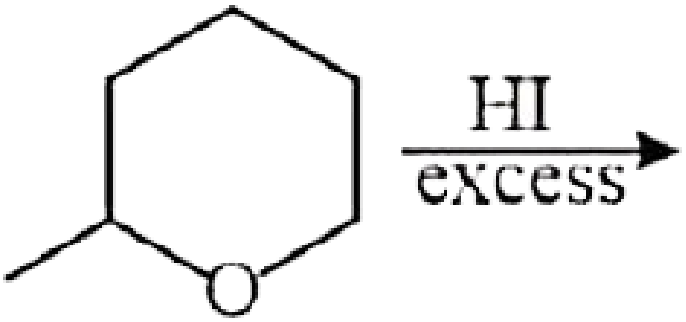
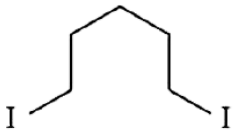
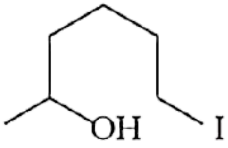
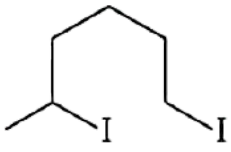
11.

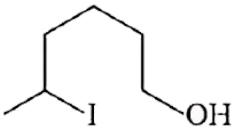


Product is

A. 

B. 

C. 

D. 

Answer: C

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12. (+) - 2 -butanol has $[\theta]_{\lambda}^{25} = +13.9^{\circ}$. A sample of 2-butanol containing both the enantiomers was found to have a specific rotation value of -3.5° under similar condition. The percentage of the (+) and (-) enantiomer present in the sample are, respectively:

A. $37.4\,\%$ and $62.6\,\%$

B. $62.6\,\%$ and $37.4\,\%$

C. $42.2\,\%$ and $57.8\,\%$

D. $35.5\,\%$ and $64.5\,\%$

Answer: A

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13. Out of all the structural isomers of $C_5H_{11}OH$, how many are primary alcohols?

A. 5

B. 4

C. 2

D. 3

Answer: B

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14. Consider the acidity of the carboxylic acids:

(1) PhCOOH

(2) $O - NO_2C_6H_4COOH$

(3) $p - NO_2C_6H_4COOH$

(4) $m - NO_2C_6H_4COOH$

Which of the following order is correct?

A. $2 > 4 > 1 > 3$

B. $2 > 4 > 3 > 1$

C. $1 > 2 > 3 > 4$

D. $2 > 3 > 4 > 1$

Answer: D

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15. pH of water is 7.0 at $25^\circ C$. If water is heated to $70^\circ C$, then:

A. pH will decrease and solution becomes acidic

B. pH will increase

C. pH will remain constant as 7

D. pH will decrease but solution will be neutral

Answer: D

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16. Gold is plated with rhodium to give a base for mounting diamonds in modern jewellery. The rhodium-gold alloy consists of gold atoms in face-centred cubic structure with half the face centers being replaced by rhodium atoms. Determine formula of this alloy.

A. Au_5Rh_3

B. $AuRh_3$

C. Au_3Rh_5

D. Au_3Rh^{-1}

Answer: A

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17. Orbital angular momentum of p-subshell is : -

A. $\frac{3h}{\pi}$

B. $\frac{6h}{2\pi}$

C. $\frac{h}{\sqrt{2}\pi}$

D. $\frac{h}{2\pi}$

Answer: C

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18. An archaeological artefact containing wood has only 80% of ^{14}C activity as found in living trees. If the half-life of C^{14} is 5730 years, then the age of the artefact may be

A. 1845 years

B. 184.5 years

C. 1900 years

D. 190 years

Answer: A

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19. If standard enthalpy of vapourisation of wate is 42 kJ/mol, then -

A. $\Delta_f H^\circ(H_2O, l) > \Delta_f H^\circ(H_2O, g)$

B. $\Delta_f H^\circ(H_2O, l) = \Delta_f H^\circ(H_2O, g)$

C. $\Delta_f H^\circ(H_2O, l) < \Delta_f H^\circ(H_2O, g)$

D. $\Delta_C H^\circ(H_2O, g) = \Delta_f H^\circ(H_2O, g)$

Answer: C

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20. In $\left[Ni(C_2O_4)_3\right]^{4-}$, the oxidation number of Ni is _____

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21. $Xe + PtF_y^-$ was the one of the first compounds made from a noble gas. The value of Y in this compound is

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22. The electronic configuration of transition element 'x'is $[Ar]3d^5 + 3$ in its +3 oxidation state. Find out the atomic number?

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23. How many 1° carbon atoms are there in the 'product' of the following reaction?

$$3CH_3 - C \equiv C - CH_3 \xrightarrow[873K]{\text{Red hot iron tube}}$$

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24. How many covalent and pi bonds in isoprene molecule ?

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25. $5.79 \times 10^5 C$ of electricity passed through the electrolyte deposited 54 g of metal (atomic mass $= 27 \text{gmol}^{-1}$). The charge on the metal cation would be _____

[Given $1F = 96500 \text{Cmol}^{-1}$]

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26. The oxidation number of P in $H_2P_2O_7$ ion is _____

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27. If a solute undergoes trimerization in solution, the minimum value of the van't Hoff factor is

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28. For the calculation, $(3.00 \times 2.303) + 10.00 = ?$ the number of significant figures in final answer is

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29. The Van der Waals constants of gas A are given as:

a (atm $L^2 \ \ \mathrm{mol}^{-2}\Big) = 8,6\Big(L\mathrm{mol}^{-1}\Big) = 0.060$

The critical pressure of A is ------ atm.

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