



CHEMISTRY

BOOKS - BITSAT GUIDE

SOLVED PAPER 2017

Part II Chemistry

1.4 g of copper was dissolved in concentrated nitric acid. The copper nitrate solution on

strong heating gave 5g of its oxide. The equivalent weight of copper is

A. 23

B. 32

C. 12

D. 20

Answer: b



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2. Choose the incorrect statement.

A. Sodium borohydride reacts very slowly with cold water

B. Sodium borohydride reacts violently with cold water to give $H_2(g)$

C. Solubility of sodium borohydride in water at $25^\circ C$ is $10.05g/ml$

D. Melting point of sodium borohydride is $500^\circ C$

Answer: b



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3. What will be the orbital angular momentum of an electron in 2s-orbital?

A. $\frac{h}{4\pi}$

B. zero

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

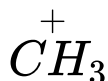
D. $\sqrt{2} \cdot \frac{h}{2\pi}$

Answer: b



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4. Which of the following are isoelectronic species?



A. I , II and III

B. II ,III and IV

C. I , II and IV

D. II and I

Answer: b



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5. Two elements whose electronegativities are 1.2 and 3.0 the bond formed between them would be

A. ionic

B. covalent

C. co-rodinate

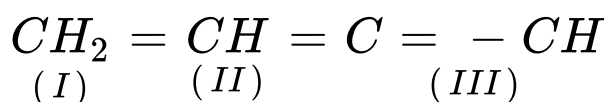
D. metallic

Answer: a



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6. In the compound,



The most acidic hydrogen atom is

A. Only I

B. Only II

C. Only III

D. All are equally acidic

Answer: c



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7. Reductive ozonolysis of

$(CH_3)_2C = C(CH_3)_2$ followed by hydrolysis

gives

A. only one type of ketone

B. only one type of aldehyde

C. two types of ketone

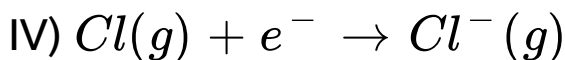
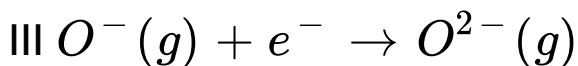
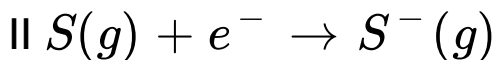
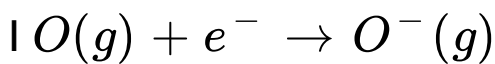
D. two types of aldehyde

Answer: a



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8. Which of the following reactions does not involved absorption energy?



A. Only II

B. I and III

C. I , II and III

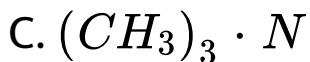
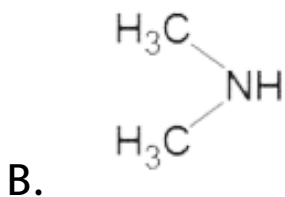
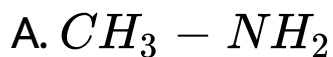
D. I , I and IV

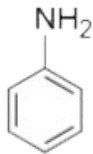
Answer: d



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9. The most reactive amine towards reactions with dil . HCl is





D.

Answer: b



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10. Blocks of magnesium are fixed to the bottom of a ship to

A. block hole in the ship

B. acidity of sea water

C. make the ship lighter

D. prevent the action of water and salt

Answer: d



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11. On electrolysis of water, a total of 1 mole of gases is evolved. The amount of water decomposed is

A. 1 mol

B. 2 mol

C. $\frac{1}{3}$ mol

D. $\frac{2}{3}$ mol

Answer: d



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12. How many moles of Fe^{2+} ions are formed when excess iron is treated with 500 mL of 0.4N HCl under inert atmosphere? Assume no change in volume

A. 0.4

B. 0.1

C. 0.2

D. 0.8

Answer: b



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13. Sodium sulphate is soluble in water but barium sulphate is insoluble because

A. hydration energy of Na_2SO_4 is more than of its lattice energy

B. lattice energy of $BaSO_4$ is more than its hydration energy

C. Both (a) and (b)

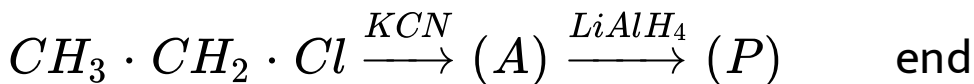
D. None of the above

Answer: c

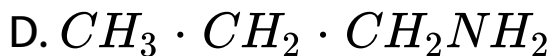
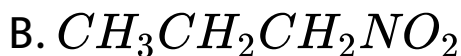


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14. In the reaction,



product (P) is

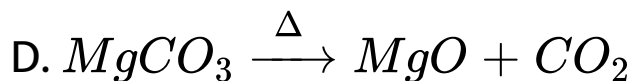
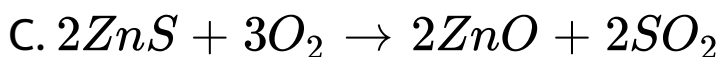
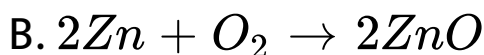


Answer: d



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15. Which one of the following reactions is an example for calcination process ?



Answer: d



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16. For an endothermic reaction, where ΔH represents the enthalpy of reaction in kJmol^{-1} , the minimum value for the energy of activation will be

- A. less than ΔH
- B. zero
- C. more than ΔH
- D. equal to ΔH

Answer: c



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17. Which of the following metal is leached by cyanide process ?

A. Ag

B. Na

C. Al

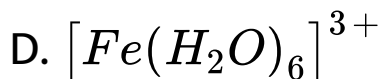
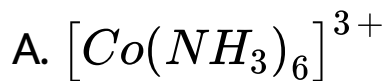
D. Cu

Answer: a



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18. Which of the following is a diamagnetic complex



Answer: a



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19. Neoprene is a

A. monomer of rubber

B. synthetic rubber

C. a natural rubber

D. vulcanised rubber

Answer: b



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20. Among the following, which have highest melting point?

A. Ionic solids

B. Pseudo solids

C. Molecular solids

D. Amorphous solids

Answer: a



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21. The night-blindness is developed due to deficiency of vitamin

A. B_6

B. C

C. B_{12}

D. A

Answer: d



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22. The transfer RNA anticodon for the messenger RNA codon G-C-A is

A. C-G-U

B. C-C-U

C. U-C-C

D. G-U-C

Answer: a



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23. If 0.765g of an acid gives 0.535g of CO_2 and 0.138g of H_2O , then the ratio of the percentage of C to H is

A. 19:2

B. 18:11

C. 20:17

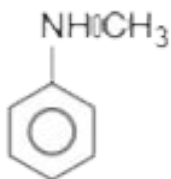
D. 1:7

Answer: a



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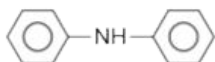
24. Maximum pK_b value is of



A.

B. $(CH_3CH_2)_2NH$

C. $(CH_3)_2NH$



D.

Answer: d



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25. Which of the following is an incorrect set of quantum numbers?

A. $n=2, l=0, m=0$

B. $n=1, l=0, m=0$

C. $n=3, l=3, m=0$

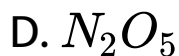
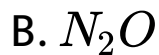
D. $n=2, l=1, m=1$

Answer: c



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26. The most acidic oxide for nitrogen is

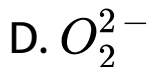
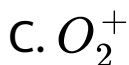
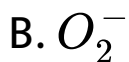


Answer: d



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27. Which of the following show maximum bond-order?



Answer: c



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28. Which of the following show an increase in entropy?

I Boiling of water

II Melting of ice

III Freezing of water

IV Formation of hydrogen gas from water.

A. (I) and (II)

B. Only (III)

C. (I) ,(II) and (IV)

D. (III) and (IV)

Answer: c



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29. BF_3 is an acid , according to

A. Lewis

B. Arrhenius

C. Bronsted and Lowery

D. All of the above

Answer: a



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30. For the reaction $N_2O_4(g) \rightarrow 2NO_2(g)$

A. $\Delta H > \Delta E$

B. $\Delta H < \Delta E$

C. $\Delta H = \Delta E$

D. $\Delta H = 0$

Answer: a



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31. Which of the following elements mostly form covalent compounds?

A. Cs

B. Rb

C. K

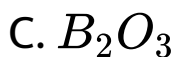
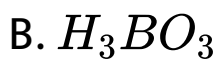
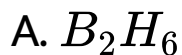
D. Li

Answer: d



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32. When aqueous solutions of borax is acidified with HCl, we get



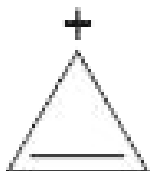
D. All of these

Answer: b

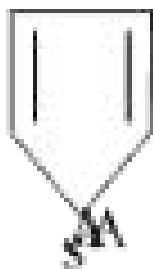


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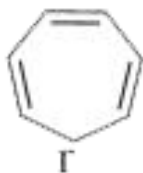
33. Which of the following compound does not follow Huckel's rule?



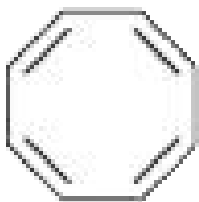
A.



B.



C.



D.

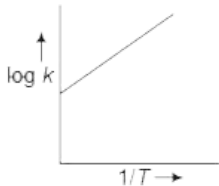
Answer: d



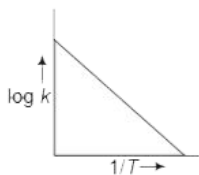
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34. A graph is plotted between $\log K$ versus $\frac{1}{T}$ for calculation of activation energy (E_a). The correct plot is

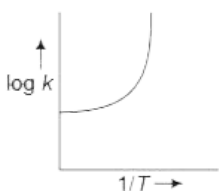
A.



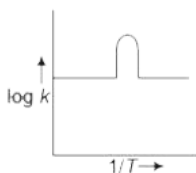
B.



C.



D.



Answer: b



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35. Hybridization of Fe in $K_3Fe(CN)_6$ is

A. sp^3

B. dsp^3

C. sp^3d^2

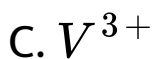
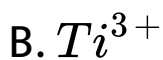
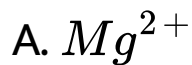
D. d^2sp^3

Answer: d



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36. Which of the following shows maximum magnetic moment?

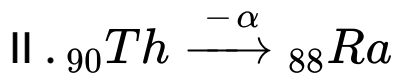
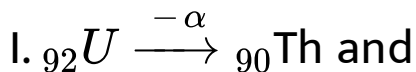


Answer: d



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37. Consider the following radioactive decays



In which case group of parent and daughter elements remains unchanged .

A. In (I)

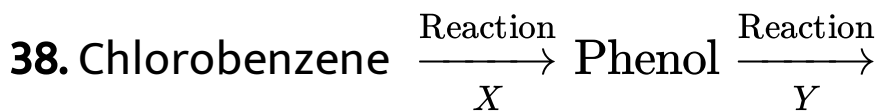
B. In (II)

C. Both in (I) and (II)

D. None of the above

Answer: a





Salicylaldehyde X and Y reaction respectively are

- A. Fries rearrangement and Kolbe
- B. Cumene and Reimer-Tiemann
- C. Dow and Reimer-Tiemann
- D. Dow and Sandmeyer.

Answer: c

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39. Which of the following has largest number of moles ?

A. 8g of oxygen atoms

B. 16 g of oxygen gas

C. 14 g of nitrogen gas (N_2)

D. All have same number of moles

Answer: d

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40. One moles each of four ideal gases are kept as follows.

I. 5 L of gas (A) at 2 atm pressure

II . 2.5 L of gas (B) at 2 atm pressure

III . 1.25 L of gas (C) at 2 atm pressure

IV . 2.5 L of gas (D) at 2.5 atm pressure

Which of the above gases is kept at highest temperature.

A. Gas (A)

B. Gas (B)

C. Gas (C)

D. Gas (D)

Answer: d



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