



CHEMISTRY

BOOKS - TS EAMCET PREVIOUS YEAR PAPERS

TS EAMCET 2019 (3 MAY SHIFT 1)

Chemistry

1. From the following energy levels of hydrogen atom, the values of E_∞ and E_3 in J are, respectively

_____ $E_\infty = \dots\dots$

_____ $E_3 = \dots\dots$

_____ $E_2 = -0.545 \times 10^{-18} J$

_____ $E_1 = -2.18 \times 10^{-18} J$

A. 1, -0.242×10^{-18}

B. ∞ , -0.726×10^{-18}

C. $0, -0.242 \times 10^{-18}$

D. $0, -0.321 \times 10^{-18}$

Answer: C

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2. Match the following.

List-I

(A) Nodes

(B) Subsidiary quantum number

(C) White light

(D) Heisenberg uncertainty principle

List-II

(I) Three dimensional shape of the orbital

(II) Significant only for motion of microscopic objects

(III) $|\psi|^2$ is zero

(IV) Spin state of electron

(V) Continuous spectrum

A. A B C D
V IV II I

B. A B C D
III IV V II

C. A B C D
IV III II I

- A B C D
D. III I V II

Answer: D



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3. In which group of the periodic table the element with $Z = 120$ be placed ?

- A. 2
B. 1
C. 14
D. 15

Answer: A



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4. Common oxidation state of f-block elements is III. The other stable oxidation state of ${}^{63}\text{Eu}$ and ${}^{65}\text{Tb}$ are respectively

A. II, IV

B. IV, II

C. II, IV

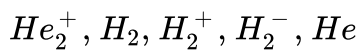
D. V, II

Answer: A



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5. How many of the following species are diamagnetic ?



A. 1

B. 2

C. 3

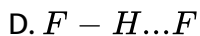
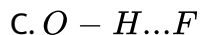
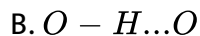
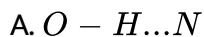
D. 0

Answer: B



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6. In which of the following hydrogen bonding is strongest ?



Answer: D



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7. What is the approximate most probable velocity of oxygen? If the kinetic energy of one mole of oxygen is 3741.3 J.

A. $\sqrt{43851} \text{ J kg}^{-1}$

B. $\sqrt{48321} \text{ J kg}^{-1}$

C. $\sqrt{155887} \text{ J kg}^{-1}$

D. $\sqrt{3950} \text{ J kg}^{-1}$

Answer: C



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8. What is the correction terms in the pressure for real gas in comparison to the ideal gas ?

A. $\frac{n^2}{V^2}$

B. $\frac{aV^2}{n^2}$

C. $\frac{an^2}{V^2}$

D. $\frac{an^2}{V} - nb$

Answer: C

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9. In a 1 L vessel, 10 moles of methane and 50 moles of O_2 are present. The number of moles of O_2 , are present. The number of moles of O_2 , water and CO_2 present in the vessel are respectively after the vessel was heated to burn methane completely.

A. 30, 20, 20

B. 30, 20, 10

C. 20, 30, 10

D. 20, 10, 30

Answer: B

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10. Identify the oxidation states of Mn when MnO_3^{3-} ion undergoes disproportionation reaction under acidic medium

A. +2, +7

B. +2, +5

C. +4, +4

D. +7, +4

Answer: D



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11. Find the heat required to make water of $30^\circ C$ from 10 g of ice at $0.0^\circ C$. (Enthalpy of fusion of ice = 333.55 J g^{-1} , C_p of water = $4.18 \text{ J g}^{-1}K^{-1}$)

A. 4.0 kJ

B. 5.0 kJ

C. 3.49 kJ

D. 4.59 kJ

Answer: D



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12. For the reaction,



the equilibrium pressure is 12 atm. If CO_2 conversion is 50%, the value of

K_p , in atm is

A. 4

B. 1

C. 0.5

D. 2

Answer: A



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13. What is the solubility product (K_{sp}) of calcium phosphate in pure water ? [S=molar solubility]

A. $108S^5$

B. $72S^3$

C. $6S^5$

D. $121S^2$

Answer: A



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14. What is the approximate volume (in mL) of 10 vol H_2O_2 solution that will react completely with 1 L of 0.02 $MKMnO_4$ solution in acidic medium?

A. 56.05

B. 113.5

C. 90.8

D. 75.75

Answer: A



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15. Which of the following products are formed on hydrolysis of NaO_2 ?

(a) $NaOH$, (b) H_2O_2 , (c) O_2 , (d) H_2O

A. A, D

B. A, C, D

C. A, B, D

D. A, B, C

Answer: D



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16. The oxidation state (n) and coordination number (C.N.) of Al and number of valence electrons around Al(N) in Al_2Cl_6 are respectively

A. 3, 3, 6

B. 3, 4, 8

C. 4, 4, 8

D. 3, 4, 6

Answer: B



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17. ΔH_f° value (in KJ mol⁻¹) for graphite, diamond and C_{60} are respectively

A. 0, 1.9, 38.1

B. 1.8, 1.9, 38.1

C. 0, 0, 21.4

D. 1.8, 1.9, 2.0

Answer: A

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18. What is the formula of the product formed when F^- reacts with enamel on teeth ?

A. $CaSO_4, CaF_2$

B. $3Ca_3(PO_4)_2, PF_5$

C. Ca_2SO_4, CaF_2

D. $3[Ca_3(PO_4)_2, CaF_2]$

Answer: D

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19. Which one of the following methods can be used to find out the percentage composition of halogen present in an organic compound ?

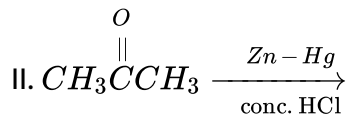
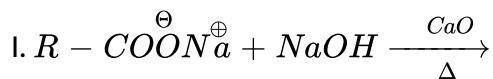
- A. Kjeldahi method
- B. Duma's method
- C. Lassaigne's method
- D. Carius method

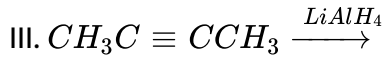
Answer: D



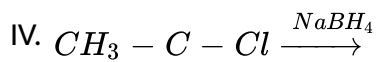
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20. Which of the following reaction produce alkane as the product?





|



|



A. I, II, III

B. I, III, IV

C. I, II, IV

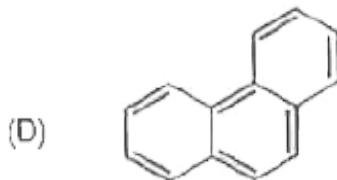
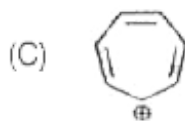
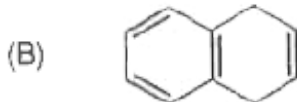
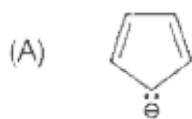
D. II, III, IV

Answer: C



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21. Which of the following are not aromatic ?



A. A, C, E

B. B, E, F

C. B, C, F

D. C, D, E

Answer: B



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22. How many of the following compounds show ferrimagnetism ?

Fe_3O_4 , $MgFe_2O_4$, $NiFe_2O_4$, MnO , CrO_2

A. 1

B. 2

C. 3

D. 4

Answer: C



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23. The molality (in mol kg^{-1}) of 1 mole of solute in 50 g of solvent is :

A. 10

B. 20

C. 30

D. 40

Answer: B

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24. The freezing point of solution containing 10 mL of non-volatile and non-electrolyte liquid "A" in 500 g of water is $-0.413^{\circ}C$. If K_f of water is $1.86\text{ K kg mol}^{-1}$ and the molecular weight of $A = 60\text{ g mol}^{-1}$, what is the density of the solution in g mL^{-1} ?

(Assume $\Delta_{mix} V=0$)

A. 1.13

B. 1.3

C. 0.90

D. 0.993

Answer: D

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25. A current of 19296 C is passed through an aqueous solution of copper sulphate using copper electrodes . What is the mass (in g) of copper deposited at the cathode ?

(molar mass of Cu = 63.5 g mol^{-1})

A. 3.17

B. 1.58

C. 6.35

D. 0.79

Answer: C



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26. For a zero order reaction , the correct expression for rate constant (k) at half-life time ($t_{1/2}$) is R_0 = initial concentration of reactant)

$$\text{A. } k = \frac{2.303}{t_{1/2}} \log \frac{[R_0]}{\frac{[R_0]}{2}}$$

$$B. k = \frac{2.303}{t} \log \frac{[R_0]}{[R_0]}$$

$$C. k = \frac{[R_0]}{t_{1/2}} = -\frac{1}{2}[R_0]$$

$$D. k = \frac{2.303}{(t_2 - t_1)} \log [R_0]$$

Answer: C

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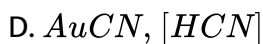
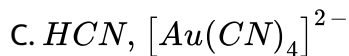
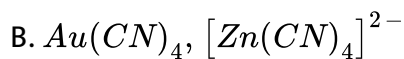
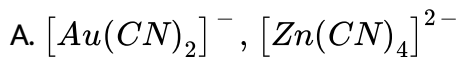
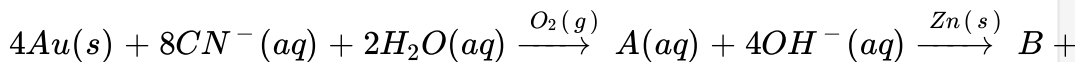
27. Which one of the following is used as an eye lotion ?

- A. Milk of magnesia
- B. Silver sol
- C. Colloidal antimony
- D. Chromium salt sol

Answer: B

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28. Identify A and B respectively in the following reactions :



Answer: A

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29. Statement(A): Sulphur vapour is paramagnetic .

Statement (B): Reaction of dil. HCl with finely divided forms $FeCl_3$ and H_2 gas.

A. Statement (A) is correct, but (B) is wrong.

B. Both the Statement are correct

C. Statement (A) is wrong, but (B) is correct

D. Both the statement are wrong

Answer: A

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30. The reason for the noble gases to have low boiling and low melting point is

A. atoms of the noble gases have weak covalent interaction

B. atoms of the noble gases have weak dipole interaction

C. atoms of the noble gases have weak van der Waal's interaction

D. atom of the noble gases have weak dispersion forces

Answer: C::D

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31. Match the following :

List I		List II	
(A) Co^{2+}	(I)	Yellow	
(B) Fe^{2+}	(II)	Dark-green	
(C) Ni^{2+}	(III)	Blue	
(D) Cu^{2+}	(IV)	Pale-green	
	(V)	Pink	

The correct answer is

- A.

A	B	C	D
V	IV	II	III
- B.

A	B	C	D
I	II	III	IV
- C.

A	B	C	D
V	I	IV	II
- D.

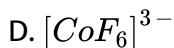
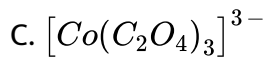
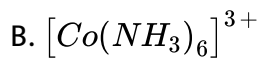
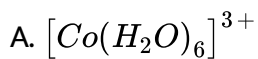
A	B	C	D
I	V	IV	II

Answer: A



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32. Which one of the following complex has the highest magnitude of Crystal Field Splitting Energy (Δ_0) ?



Answer: B

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33. A polymer contains 50 molecules with molecular mass 5000, 100 molecules with molecular mass 10,000 and 50 molecules with molecular mass 15,000. Calculate number average molecular mass ?

A. 5000

B. 75000

C. 10000

D. 20000

Answer: C



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34. Which of the following are reducing sugars ?

Sucrose Maltose Lactose Fructose

(A) (B) (C) (D)

A. A, B, C

B. A, B, D

C. A, C, D

D. B, C, D

Answer: D



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35. Identify opiates from the following

Codeine Thymine Epinehrine Morphine Thiamine Heroin

(A) (B) (C) (D) (E) (F)

A. A, D, F

B. C, D, E

C. B, E, F

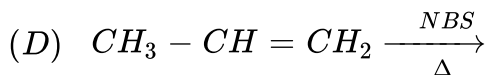
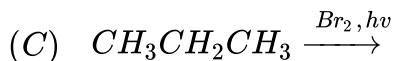
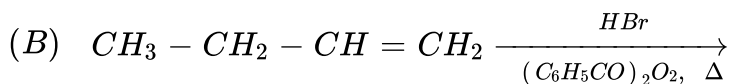
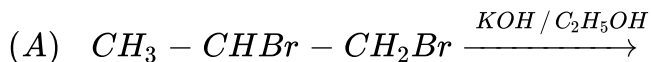
D. A, B, C

Answer: A

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36. Match the following

List I



List II

(Major

Product)

(I) 1° - alkyl br

(II) 2° - alkyl br

(III) Alkyl bromide

(IV) Alkenyl brom

the correct answer is

A.

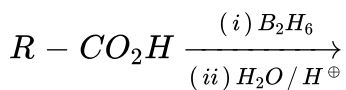
A	B	C	D
I	IV	II	III

- A B C D
 B. IV III I II
 C. II III I IV
 A B C D
 D. IV I II III


Answer: D

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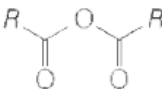
37. Find the suitable product for the following reaction .



A. $R - CHO$

B. 

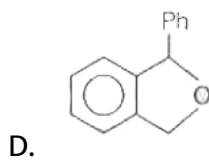
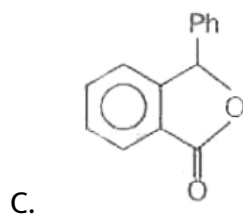
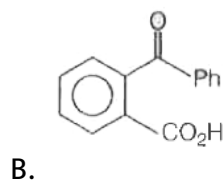
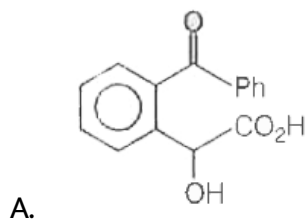
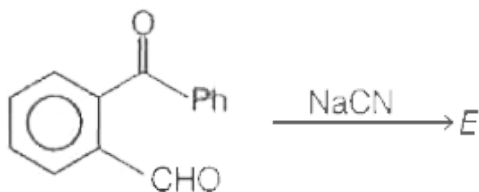
C. $R - CO_2R$

D. 

Answer: B



38. What is the product E in the following reaction?



Answer: C

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39. The decreasing order of acidic strength for following acids is

(a) CH_3COOH , (b) $CH_3CHClCH_2COOH$, (c) $ClCH_2COOH$, (d)
 $Cl_2CHCOOH$

A. $B > C > A > D$

B. $D > C > B > A$

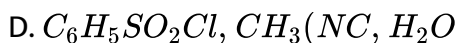
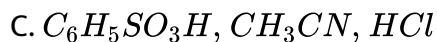
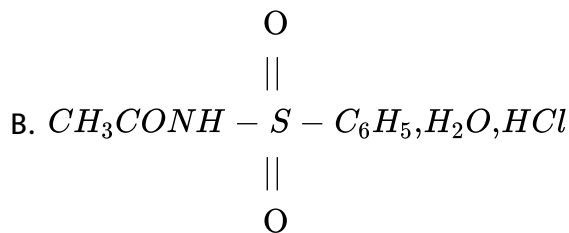
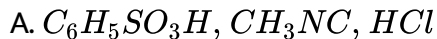
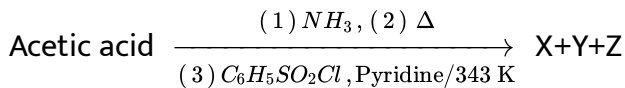
C. $D > B > C > A$

D. $C > D > B > A$

Answer: B

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40. Identify X,Y and Z respectively in the following reaction sequence



Answer: B



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