



CHEMISTRY

BOOKS - TS EAMCET PREVIOUS YEAR PAPERS

TS EAMCET 2018 (4 MAY SHIFT 1)

Chemistry

1. The energy of an electron in the 3rd orbit of H- atom (in J) is approximately.

A. -2.18×10^{-18}

B. -2.42×10^{-19}

C. -1.21×10^{-19}

D. -3.63×10^{-19}

Answer: B



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2. The wavelength (in m) of a particle of mass 11.043×10^{-26} kg moving with a velocity of $6.0 \times 10^7 \text{ m s}^{-1}$ is

A. 1.0×10^{16}

B. 6.0×10^{-16}

C. 1.0×10^{-16}

D. 6.0×10^{16}

Answer: C



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3. Covalent bond length of chlorine molecules is 1.98 Å.

Covalent radius in (in Å) of chlorine atom is

A. 1.98

B. 0.99

C. 3.96

D. 0.49

Answer: B



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4. The covalency of Al in $[AlCl(H_2O)_5]^{2+}$ is

A. 3

B. 5

C. 1

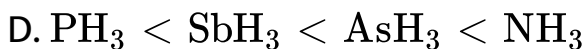
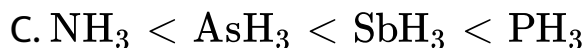
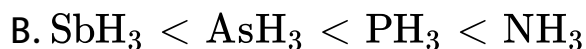
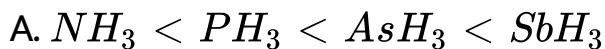
D. 6

Answer: D



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5. The correct order of bond angles of the given compounds is



Answer: B



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6. The molecular orbital theory supports paramagnetic behavior of

A. Be_2

B. C_2

C. N_2

D. O_2

Answer: D



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7. Which of the following represents van der Waals' equation for n moles of the gas?

A. $\left(p + \frac{a}{V^2}\right)(V - b) = nRT$

B. $p(V - b) = nRT$

$$C. \left(p + \frac{a}{V^2} \right) V = nRT$$

$$D. pV + \frac{an^2}{V} - \frac{abn^3}{V^2} - pnb = nRT$$

Answer: D



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8. The kinetic energy in J of 1 mole of N_2 at $27^\circ C$ is

$$(R = 8.314 \text{ mol}^{-1} \text{ k}^{-1})$$

A. 2494

B. 18706

C. 7482

D. 3741

Answer: D

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9. In the titration of I_2 (aq) by $S_2O_3^{2-}$ (aq) using the starch indicator, the end point is indicated by

- A. colourless to blue
- B. blue to colourless
- C. pink to colourless
- D. blue to pink

Answer: B

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10. When 10 g of 90% pure limestone is heated, the approximate volume (in L) of CO_2 liberated at STP is

A. 4.4

B. 2.0

C. 4.0

D. 22.4

Answer: B



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11. At 298 K, the equilibrium constant of the process $1.5O_2(g) \rightleftharpoons O_3(g)$ is 3×10^{-29} . Standard free energy change (in K. J mol^{-1}) of the process is approximately ($R = 8.314 J mol^{-1} K^{-1}$, $\log 3 = 0.47$)

A. 724

B. 612

C. 247

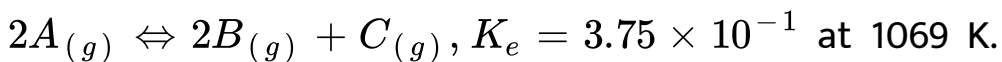
D. 163

Answer: D



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12. For a reaction



The approximate value of K_p for this reaction at the same temperature is ($R = 0.082 \text{ Lbar mol}^{-1} \text{ K}^{-1}$)

A. 2.4×10^{-4}

B. 3.3×10^{-4}

C. 33×10^2

D. 7.2×10^4

Answer: B



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13. The degree of dissociation of $0.1NCH_3COOH$ is (given $K_a = 1 \times 10^{-5}$) approximately

A. 1×10^{-6}

B. 1×10^{-7}

C. 1×10^{-3}

D. 1×10^{-2}

Answer: D



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14. Match the reactants in List-I with the products in List-

II.

	List I	List II
A	$\text{H}_2\text{O} + \text{H}_2\text{S}$	(i) $(\text{H}_3\text{O}^+, \text{HS}^-)$
B	$\text{H}_2\text{O} + \text{N}^{3-}$	(ii) $(\text{NH}_3, \text{OH}^-)$
C	$\text{H}_2\text{O} + \text{SiCl}_4$	(iii) $(\text{OH}^-, \text{H}_3\text{S}^+)$
D	$\text{H}_2\text{O} + \text{F}_2$	(iv) $(\text{SiO}_2, \text{HCl})$
		(v) $(\text{SiO}_4^{4-}, \text{Cl}_2)$
		(vi) (O_2, F^-)
		(vii) (HF, OH^-)
		(viii) $(\text{OH}^-, \text{HN}_3)$

The correct answer is

- A. $A \quad B \quad C \quad D$
 (i) (viii) (v) (vi)
- B. $A \quad B \quad C \quad D$
 (iii) (ii) (v) (vii)
- C. $A \quad B \quad C \quad D$
 (iii) (viii) (iv) (vii)
- D. $A \quad B \quad C \quad D$
 (i) (iii) (iv) (vi)

Answer: D



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15. When sodium (Na) metal is dissolved in liquid ammonia (NH_3), it imparts a blue colour to the solution.

This blue colouration is due to

A. liquid NH_3

B. $[\text{Na}(\text{NH}_3)_x]^+$

C. NaNH_2

D. $[\bar{e}(\text{NH}_3)_x]^-$

Answer: D





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16. Identify the correct statements from the following

(a) In orthoboric acid, boron is in planar geometry

(b) In BCl_3 , NH_3 , boron has tetrahedral geometry

(c) Aqueous solution of borax is acidic

A. (i), (ii)

B. (ii), (iii)

C. (i), (iii)

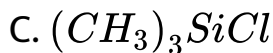
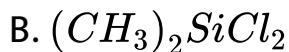
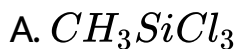
D. (i), (ii), (iii)

Answer: A



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17. Si reacts with CH_3Cl at 573 K in the presence of Cu powder to form methyl substituted chlorosilanes. Among the given methyl substituted chlorosilanes, whose yield is minimum?

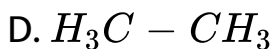
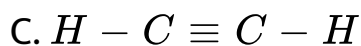
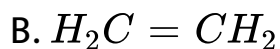


Answer: D



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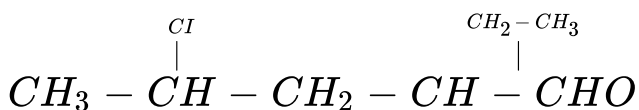
18. When vegetation is burnt in the absence of oxygen, which of the following will be formed ?

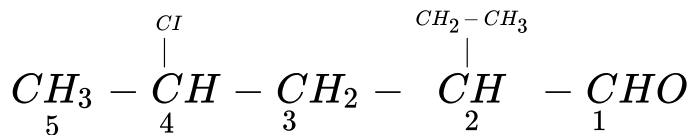


Answer: A

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19. IUPAC name for the following compound is





A. 2-chloro-4-ethylpentanal

B. 2-ethyl-4-chloropentanal

C. 4-chloro-2-ethylpentanal

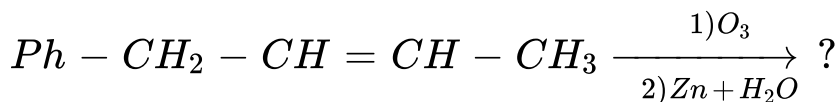
D. 2-chlorohexane-4-al

Answer: C



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20. What are the products formed in the reaction given below?



A. Acetic acid and 2-phenyl acetic acid

B. 2-phenyl ethanal and ethanal

C. 2-phenyl ethanol and ethanol

D. 1-phenyl butan-2, 3-diol

Answer: B



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21. The major product obtained in the reaction of isobutyl benzene with acetic anhydride in the presence of anhydrous $AlCl_3$ is

A. p-isobutyl acetophenone

B. acetophenone

C. m-isobutyl acetophenone

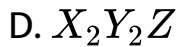
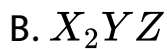
D. o-isobutyl acetophenone

Answer: A

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22. A compound is formed by elements of X, Y and Z .
Atoms of Z (anions) fcc lattice. Atoms of X (cations) occupy all the octahedral voids. Atoms of Y (cations) occupy $\frac{1}{3}rd$ of the tetrahedral voids. The formula of the compound is

A. $X_3Y_2Z_3$



Answer: A



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23. A litre of sea water (which weighs 1030 g) contains $6 \times 10^{-3}g$ of dissolved oxygen . The concentration of dissolved oxygen is p'pm is

A. 5.8

B. 6

C. 6.2

D. 6.4

Answer: A



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24. At 300 K, a one litre solution of sucrose (molecular weight : 342) was prepared by dissolving 40 g of sucrose.

What is the approximate osmotic pressure (in kPa) of solution at the same temperature ?

$$(R = 8.314 \times 10^6 \text{ cm}^3 \text{ PaK}^{-1} \text{ mol}^{-1})$$

A. 292

B. 500

C. 292000

D. 600

Answer: A

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25. The EMF of a galvanic cell consisting of two hydrogen electrodes is 0.17 V. If the solution of one of the electrodes has $[H^+] = 10^{-3}$ M, the pH at the other electrode is

A. 5.87

B. 4.88

C. 2.08

D. 3.08

Answer: A



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26. If the rate constants of a reaction at 500K and 700K are $0.002s^{-1}$ and $0.06s^{-1}$ respectively, the value of K^{-1} activation energy is

$(R = 8.314Jmol^{-1}K^{-1}, \log 3 = 0.477)$

A. $49.49 \text{ kJ mol}^{-1}$

B. $98.98 \text{ kJ mol}^{-1}$

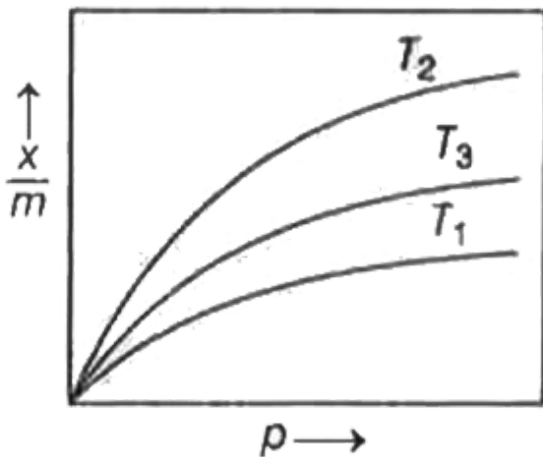
C. $24.75 \text{ kJ mol}^{-1}$

D. $12.37 \text{ kJ mol}^{-1}$

Answer: A

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27. The following graph is obtained for physisorption of a gas as a function of pressure at different temperatures.



The correct order of temperatures is

A. $T_3 < T_2 < T_1$

B. $T_2 < T_3 < T_1$

C. $T_2 < T_1 < T_3$

D. $T_1 < T_3 < T_2$

Answer: B



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28. Identify the correct set of sulphide ores from the following

A. Fool's gold, calamine, kaolinite

B. Sphalerite, fool's gold, chalcopyrites

C. Copper glance, siderite, malachite

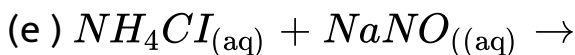
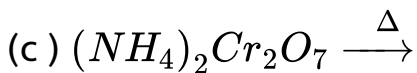
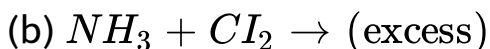
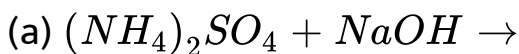
D. Bauxite, magnetite, zincite

Answer: B



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29. Identify the reactions in which N_2 is liberated



A. (i), (ii), (iii)

B. (iii), (iv), (v)

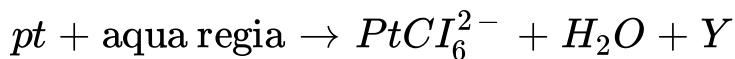
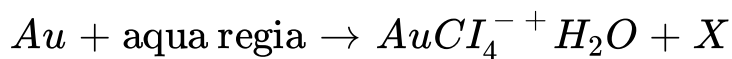
C. (ii), (iii), (v)

D. (i), (iii), (iv)

Answer: C

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30. What are X and Y, respectively in the following reactions?



A. N_2O , NO

B. N_2O , N_2O

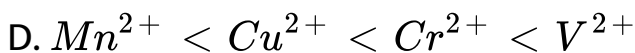
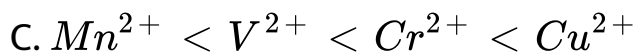
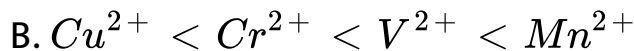
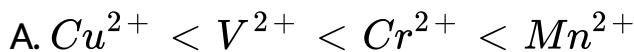
C. NO , NO

D. NO, NO_2

Answer: C

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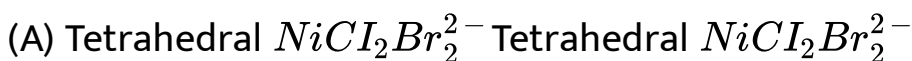
31. Which of the following sets correctly represents the increasing paramagnetic property of the ion?



Answer: A



32. Which of the following molecules / ions can exhibit isomerism?



where, end = 1,2 - di amino ethane

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

B. (ii), (iii), (v)

C. (ii), (iii), (iv)

D. (i), (ii), (iii), (v)

Answer: B



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33. The formation of terylane (or decron) from ethylene glycol and terephthalic acid is

- A. a condensation polymerisation reaction
- B. an anionic polymerisation reaction
- C. an addition polymerisation reaction
- D. a cationic polymerisation reaction

Answer: A



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34. Which of the following carbohydrates has a glycosidic linkage?

A. Fructofuranose

B. Glucopyranose

C. Maltose

D. β -D-fructose

Answer: C



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35. Identify an antioxidant, an antiseptic, and an antibiotic respectively from the following

Equanil Chloramphenicol Bithional

(A) (B) (C)

Aspartame Dimetapp Butylated hydroxytoluene

(D) (E) (F)

A. A,C,E

B. F,C, B

C. B,D,E

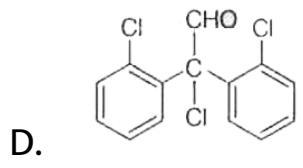
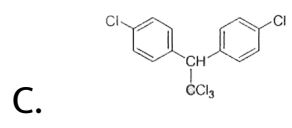
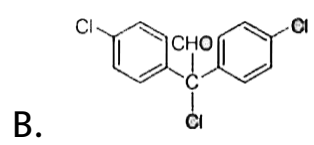
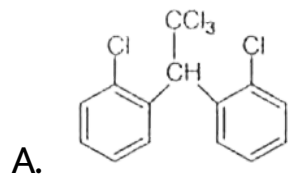
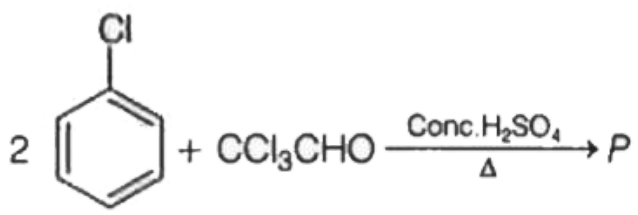
D. C,D,F

Answer: B



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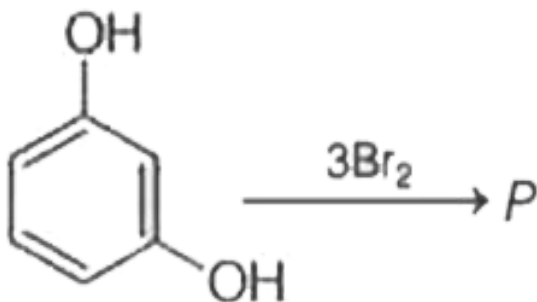
36. The major product (P) formed in the following reaction is



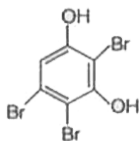
Answer: C

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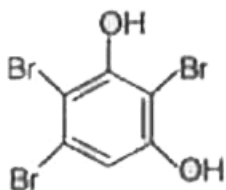
37. The product (P) of the below reaction is



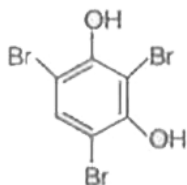
A.



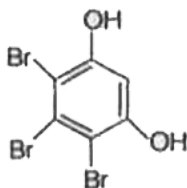
B.



C.



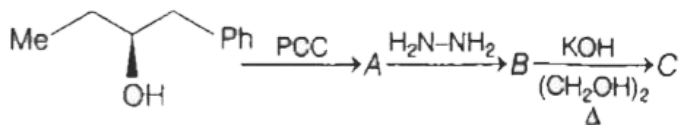
D.

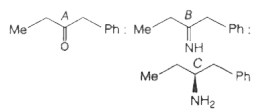


Answer: C

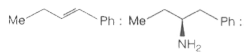
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38. The products A, B and C in the following reaction sequence are

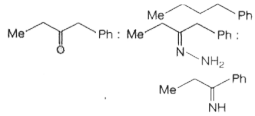




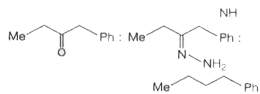
A.



B.



C.



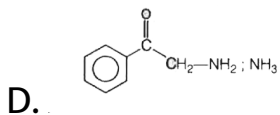
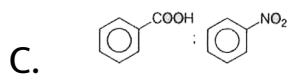
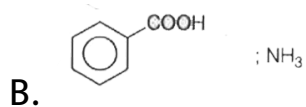
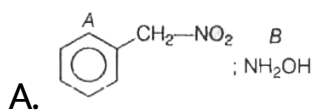
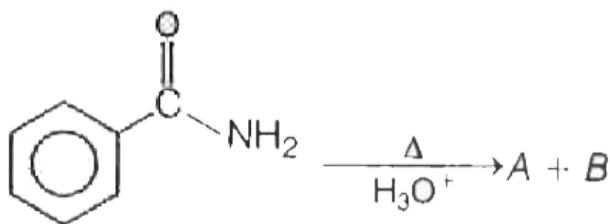
D.

Answer: D



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39. Identify A and B in the following reaction



Answer: B



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40. Which product of the following reactions fails to give carbyl amine test?

- A. Hoffmann-bromamide degradation
- B. Gabriel phthalimide synthesis
- C. Reduction of nitrites LiAlH_4
- D. Reduction of tertiary amides with LiAlH_4

Answer: D



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