doubtnut
India's Number 1 Education App

CHEMISTRY

BOOKS - TS EAMCET PREVIOUS YEAR PAPERS

TS EAMCET 2019 (3 MAY SHIFT 2)

Chemistry

1. The radius of the 2^{nd} orbit of B^{4+} ion is

A. 4.23 Å

B. 0.2340 Å

C. 0.4232 Å

D. 0.3241 Å

Answer: C

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2. The product of uncertainty in the position and uncertainty in velocity of a particle is $5.79 \times 10^{-5} m^2 s^{-1}$. If uncertainty in the position is 1 nm , what is the uncertainty in the measurement of its velocity in ms^{-1} ?

A. 5.79×10^7

B. 5.79×10^5

C. 5.79×10^{-5}

D. 5.79×10^4

Answer: D

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3. Among the isoelectronic ions $\left(O^{2-}, N^{3-}, Mg^{2+}, Na^{+}\right)$, the ions with least and highest ionic radius are respectively

A. Mg^{2+}, N^{3-}

B. Mg^{2+}, O^{2-}

C. Na^{+}, N^{3-}

D. Na^{+}, O^{2-}

Answer: A

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4. The correct increasing order of basic character of $Ce(OH)_3, Gd(OH)_3$ and $Nd(OH)_3$ is

A. $Ce(OH)_3 < Nd(OH)_3 < Gd(OH)_3$

B. $Gd(OH)_3 < Ce(OH)_3 < Nd(OH)_3$

C. $Gd(OH)_3 < Nd(OH)_3 < Ce(OH)_3$

D. $Ce(OH)_3 < Gd(OH)_3 Nd(OH)_3$

Answer: C

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5. How many ions of the following have bond order of 2.5 ?

$N_2, NO^-, C_2^-, N_2^+, C_2^{2-}, CN^+$

A. 4

B. 3

C. 2

D. 5

Answer: B

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6. Which of the following ions has tetrahedral geometry and sp^3 - hybridisation for its central atom ?

A. BH_4^-

B. NH_2^-

C. CO_3^{2-}

D. H_3O^+

Answer: A

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7. Diffusion of $CH_4(g)$ and $O_2(g)$ occurs under similar conditions, then the ratio of their rates of diffusion is

A. 1.414

B. 0.707

C. 2.312

D. 1.732

Answer: A

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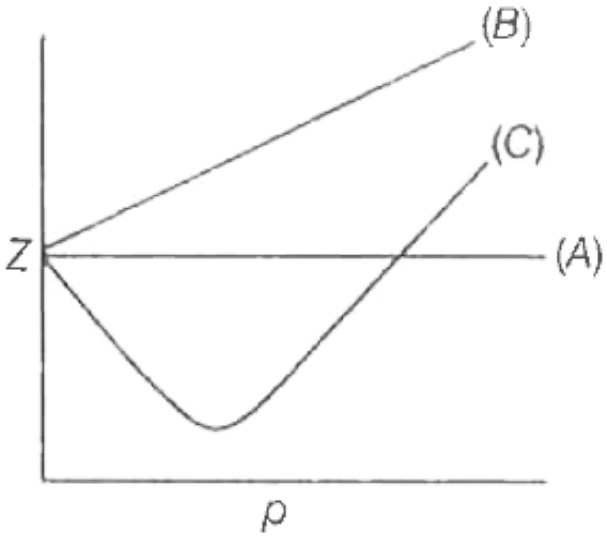
8. The variation of compressibility factor (Z) with pressure (p in bar) for some gases are shown in the figure below.

Identify the gases (A) ,(B) and (C) respectively



A. real gas , N_2, CO_2

B. ideal gas, H_2CO_2

C. ideal gas , CO_2, H_2

D. real gas, H_2CO_2

Answer: B

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9. What is the equivalent weight of methanol if one mole of CH_3OH is combusted to form CO and H_2O ?

A. 8

B. 5.33

C. 4

D. 10.66

Answer: A

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10. While combusting in air , 4g of H_2 was completely converted into water. If 36μ mole of CO_2 from air is dissolved into that water, what is the concentration of CO_2 ?

A. $1\mu M$

B. $1mM$

C. 1 nM

D. 1000 mM

Answer: B

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11. Which of the following does not follow first law of thermodynamics ? (W = work , q = heat, ΔU = change in internal energy)

A. $W > 0, q > 0 \Delta U < 0$

B. $W = 0, q = 0, \Delta U = 0$

C. $W > 0, q = 0 \Delta U > 0$

D. $W < 0, q < 0 \Delta U < 0$

Answer: A

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12. Match the following :

List I (Reaction)		List II (K_p)	
A.	$2SO_2(g) + O_2(g) \rightleftharpoons 2SO_3(g)$ at 298 K	I.	0.98
B.	$2SO_2(g) + O_2(g) \rightleftharpoons 2SO_3(g)$ at 700 K	II.	3.0×10^4
C.	$N_2O_4(g) \rightleftharpoons 2NO_2(g)$ at 298 K	III.	1700
D.	$N_2O_4(g) \rightleftharpoons 2NO_2(g)$ at 500 K	IV.	4.0×10^{24}
		V	6.8×10^{-5}

The correct answer is

A. $\begin{matrix} A & B & C & D \\ I & V & II & III \end{matrix}$

B. $\begin{matrix} A & B & C & D \\ V & III & IV & II \end{matrix}$

C. $\begin{matrix} A & B & C & D \\ IV & II & I & III \end{matrix}$

D. $\begin{matrix} A & B & C & D \\ IV & V & II & III \end{matrix}$

Answer: C

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13. A solution of 0.1 mole of $CH_3NH_2\left(K_b = 5 \times 10^{-4}\right)$ and 0.08 mole of HCl is diluted to one litre, then the pOH of the solution is (log 1.25 =0.1)

A. 10.1

B. 3.9

C. 4.9

D. 9.9

Answer: B

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14. What are two types of crystal structures shown by ice at different pressures ?

A. Hexagonal and monoclinic

B. Cubic and monoclinic

C. Hexagonal and tetragonal

D. Cubic and hexagonal

Answer: D

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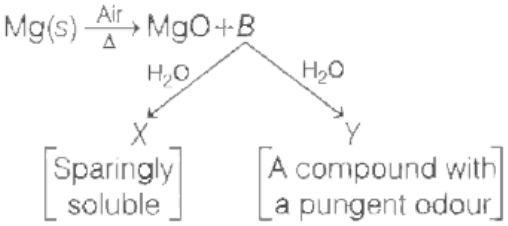
15. Identify X and Y respectively in the following reactions



A. MgO, C

B. $Mg(OH)_2 : Mgo$

C. MgO, NH_3

D. $Mg(OH)_2 : NH_3$

Answer: D

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16. Which one among the following statements is correct about a solution of borax in water ?

A. it is acidic because it contains H_3BO_3 and $NaOH$

B. it dissociates into $NaBO_2$ and B_2O_3

C. it is neutral because it contains $NaOH$ and H_3BO_3

D. it is alkaline because it contains $NaOH$ and H_3BO_3

Answer: D

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17. Identify the correct statements from the following :

I . Quartz is a piezoelectric material.

II. All group 14 tetrachlorides except CCl_4 are easilly hydrolysed by water

III. The C-C bond distance within the layer of graphite is 154 pm.

IV. SiO_2 is soluble in aqueous HCl solution.

A. I,III

B. I,II

C. III,IV

D. II,IV

Answer: B

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18. Match the following :

List I		List II
A. SO_2	(i)	Photochemical smog
B. PAN	(ii)	Acid rain
C. Smoke	(iii)	Stratospheric pollutant
D. CF_2Cl_2	(iv)	Particulate

The correct answer is

A. $\begin{matrix} A & B & C & D \\ IV & III & I & II \end{matrix}$

B. $\begin{matrix} A & B & C & D \\ III & I & IV & II \end{matrix}$

C. $\begin{matrix} A & B & C & D \\ IV & I & III & II \end{matrix}$

D. $\begin{matrix} A & B & C & D \\ II & I & IV & III \end{matrix}$

Answer: D

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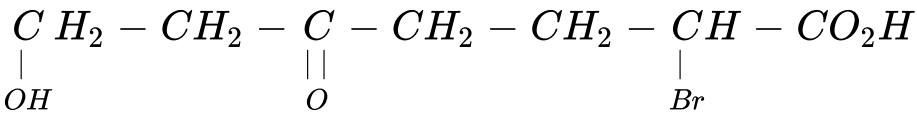
19. Find the suitable IUPAC name of the compound given below



A. 2- bromo -7 -hydroxy-5-oxo heptanoic acid

B. 1- hydroxy-3-keto-6- bromo heptanoic acid

C. 2-bromo-5-keto -7-hydroxy heptanoic acid

D. 5-oxo-7- hydroxy -2- bromo heptanoic acid

Answer: A

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20. The boiling poing (in K) of cis but -2- ene and dipole moment (in D) of trans but -2- ene are respectively

A. 274,0.00

B. 277,0.00

C. 277,0.33

D. 274,0.33

Answer: B

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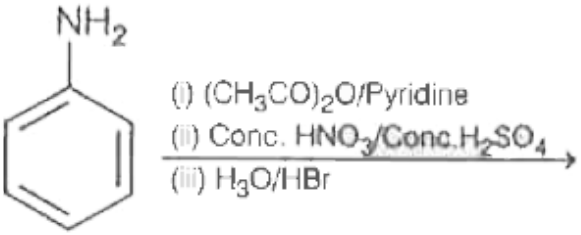
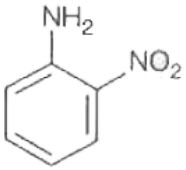
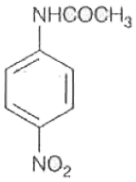
21. The major product formed in the following reaction sequence is

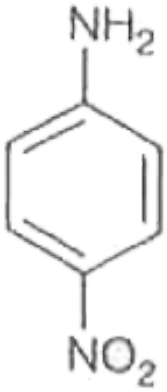

NH2
(i) (CH3CO)2O/Pyridine
(ii) Conc. HNO3/Conc.H2SO4
(iii) H3O/HBr


NH2
NO2

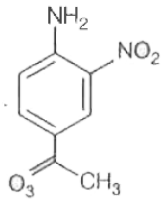
A.


NHCOCH3
NO2

B.


NH2
NO2

C.

D. 

Answer: C

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22. NaCl is fcc lattice , where Na^+ ions are at corner and face centre position . Chloride ions are at edge centres and body centre positions.

How many NaCl formula units will be in an unit cell ?

A. 2

B. 4

C. 3

D. 1

Answer: B

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23. How many grams of glucose are required to prepare an aqueous solution of glucose having a vapour pressure of 23.324 mm Hg at $25^{\circ}C$ in 100 g of water ? The vapour pressure of pure water at $25^{\circ}C$ is 23.8 mm Hg.

(Molar mass of glucose $= 180mol^{-1}$)

A. 20.4

B. 10.3

C. 5.4

D. 7.4

Answer: A

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24. If 0.1 M solution of NaCl is isotonic with 1.1 w % urea solution, the degree of ionisation of NaCl is (molar masses of urea and NaCl are 60 and 58.5 g mol^{-1} respectively)

A. 2

B. 0.83

C. 1

D. 1.83

Answer: B

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25. An electrolyte of a polymer -salt complex of poly (ethylene oxide) $LiCF_3SO_3$ is shaped into a free standing circular film of 20 mm diameter and a thickness of $20\mu m$. When it is sandwiched between 2 stainless steel circular electrodes of the same diameter , this cell exhibits a conductance of $\frac{314}{5}$ S. What is the specific conductivity of the electrolyte ?

A. $4mScm^{-1}$

B. $0.4Scm^{-1}$

C. $40mScm^{-1}$

D. $0.004Scm^{-1}$

Answer: C

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26. The following results have been obtained during the kinetic studies of reaction :

$$2NO + 2H_2 \longrightarrow N_2 + 2H_2O$$

Expt	$\frac{-d[NO]}{dt}$ mol L^{-1} s^{-1}	[NO] mol L^{-1}	$[H_2]$ mol L^{-1}
1.	4.8×10^{-5}	1×10^{-2}	1×10^{-3}
2.	432×10^{-5}	3×10^{-2}	1×10^{-3}
3.	86.4×10^{-5}	3×10^{-2}	2×10^{-3}

The rate law is

A. $\frac{-d[NO]}{dt} = k[NO]^2[H_2]$

B. $\frac{-d[NO]}{dt} = k[NO]^2[H_2]^{\frac{1}{2}}$

C. $\frac{-d[NO]}{dt} = k[NO][H_2]^2$

D. $\frac{-d[NO]}{dt} = k[NO][H_2]$

Answer: A

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27. The mass of haemoglobin in mg required to protect from coagulation of 50 mL of a gold sol on adding 5 mL of 10 % NaCl solution is (gold number of haemoglobin = 0.03)

A. 0.03

B. 0.75

C. 0.30

D. 0.15

Answer: D

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28. In the preparation of chloration of chlorine by the electrolysis of brine, the reation taking place at the anode is

A. $Cl^{-(aq)} \rightarrow \frac{1}{2}Cl_2(g) + e^-$

B. $Na^+(aq) + e^- \rightarrow Na(s)$

C. $O_2(g) + 4H^+ + 4e^- \rightarrow 4H_2O(l)$

D. $H^+(aq) + e^- \rightarrow \frac{1}{2}H_2(g)$

Answer: A

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29. Which is the correct equation for the reaction of AgCl with NH_4OH ?

A. $AgCl + NH_4OH \rightarrow AgOH + NH_4^+ + Cl^-$

B.

$$AgCl + 2NH_4OH \rightarrow \left[Ag(NH_3)_2\right]^+ + Cl^- + 2H_2O$$

C.

$$AgCl + 4NH_4OH \rightarrow \left[Ag(NH_3)_4\right]^+ + Cl^- + 4H_2O$$

D.

$$2AgCl + NH_4OH \rightarrow Ag_2O + NH_4^+ + H^+ + 2Cl^-$$

Answer: B

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30. Name the gaseous products from the following A and B reactions respectively .

A . Hydrochlotic acid is added to sodium sulphide.

B. Conc. Sulphuric acid is added to a mixture of sodium

chloride and manganese dioxide.

The correct answer is

A. Cl_2, Cl_2

B. H_2, HCl

C. H_2S, O_2

D. H_2S, Cl_2

Answer: D

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31. The elements with the highest and lowest enthalpy of atomisation , respectively for first row transition elements are

A. Sc , Zn

B. Ti ,Ni

C. V, Zn

D. Cr, Mn

Answer: C

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32. The IUPAC name of the compound

$(NH_4)_2\left[Ni(C_2O_4)_2(H_2O)_2\right]$ is

A. Nickel (II) diammino dioxalato diaquate

B. Dioxalatodiammino diaquo nickelate (III)

C. Ammonium diaquabis (oxalato) nickelate (II)

D. Ni dioxalato diaqua (II) amminate

Answer: C

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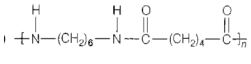
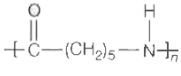
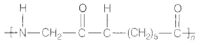
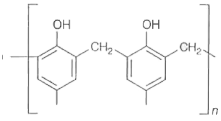
33. Which one of the following is a biodegradable polymer ?

A. 

B. 

C. 

D. 

Answer: C

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34. The enzyme responsible for the conversion of proteins to α - amino acid is

A. pepsin

B. trypsin

C. maltase

D. amylase

Answer: B

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35. Match the following :

	List I		List II
A.	Analgesic	(i)	Phenelzine
B.	Tranquilizer	(ii)	Terfenadine
C.	Antibiotic	(iii)	Codeine
D.	Antihistamine	(iv)	Prontosil

The correct answer is

A. $\begin{matrix} A & B & C & D \\ III & II & IV & I \end{matrix}$

B. $\begin{matrix} A & B & C & D \\ III & I & IV & II \end{matrix}$

C. $\begin{matrix} A & B & C & D \\ II & III & I & IV \end{matrix}$

D. $\begin{matrix} A & B & C & D \\ II & III & IV & I \end{matrix}$

Answer: B

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36. Which one of the following is used to obtain the maximum percentage of terminal alkene by dehydrohalogenation of

$CH_3CH_2C(CH_3)_2Br$?

A. Sodium ethoxide in ethanol

B. Potassium ethoxide in ethanol

C. Potassium tert -butoxide in tert -butyl alcohol

D. potassium alkoxide derived from 3-ethyl -3-pentanol in $HO-C(C_2H_5)_3$

Answer: C

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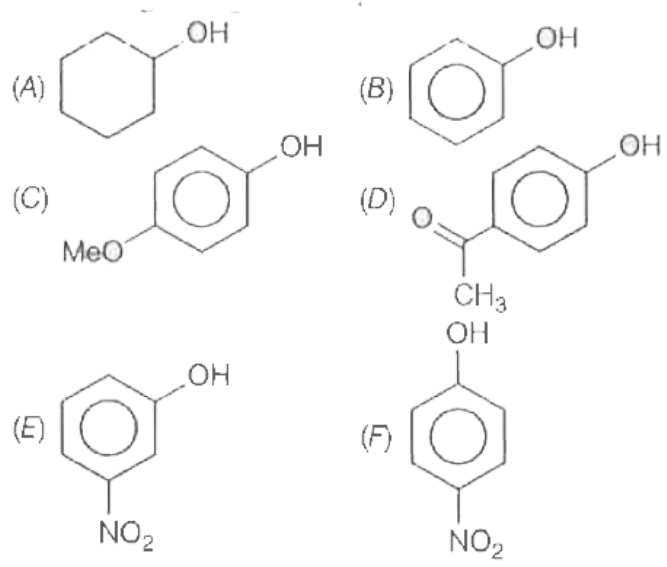
37. Find the correct order of acid strengths of the following compounds :



A. $F > D > E > B > C > A$

B. $D > F > E > C > \ > B > A$

C. $D > E > F > B > C > A$

D. $F > E > D > B > C > A$

Answer: A

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38. The compound that does not undergo haloform reaction is

A. CH_3CHO

B. CH_3CH_2OH

C. CH_3COCH_3

D. $C_2H_5COCH_2CH_3$

Answer: D

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39. Which of the below reactions produce carboxylic acids ?

I. $HC \equiv C - CH = \underset{\displaystyle CH_3}{\overset{\displaystyle |}{C}} - CH_2OH \xrightarrow[CH_3COCH_3]{MnO_2}$

II. $Ph - CCl_3 \xrightarrow[(ii)\, H_2 \frac{\emptyset}{H^{\oplus}}]{(i)\, aq.NaOH}$

III. *[Math Processing Error]*

IV. $CH_3CH = CHCH_3 \xrightarrow[\Delta]{K_2Cr_2O_7 \,/\, H_2SO_2}$

A. I,II,III

B. II,III,IV

C. I,III,IV

D. I,II,IV

Answer: B

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40. Find the suitable method from the following to prepare primary amines without the loss of carbons.

A. Gabriel method

B. Alkylation method

C. Hoffmann Bromamide method

D. Stephen method

Answer: A

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