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JEE (MAIN) 2026

MEMORY BASED QUESTIONS & TEXT SOLUTION

SHIFT-1

DATE & DAY: 28 January 2026 & Wednesday

PAPER-1

Duration: 3 Hrs.
Time: 09:00 – 12:00 IST

SUBJECT: CHEMISTRY

REGISTERED & CORPORATE OFFICE (CIN: U80302RJ2007PLC024029):
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PART : CHEMISTRY

1. In Carius method of estimation of ' Br ', 1.53 g of an organic compound gave 1 g AgBr. The % of Br in organic compound is, (Atomic mass of Ag, Br = 108, 80 u respectively)

(1) 35.23 (2) 43.53 (3) 27.81 (4) 22.71

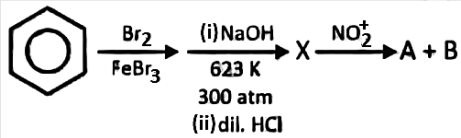
Ans. **(3)**

2. In period 4 of the periodic table which elements have the highest and lowest atomic radii respectively

(1) K and Br (2) Na and Cl (3) K and Se (4) Rb and Br

Ans. **(1)**

3. Consider the following reaction sequence :



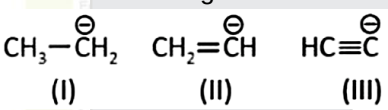
The organic product ' A ' and ' B ' can be separated by

(1) Steam distillation (2) Fractional distillation

(3) Distillation under reduced pressure (4) Azeotropic distillation

Ans. **(1)**

4. Consider following ions



Stability of ions is in order

(1) III > II > I (2) II > III > I (3) I > II > III (4) I > III > II

Ans. **(1)**

5. For a first order reaction, $X \rightarrow Y + Z$, time required for decomnncition of $\frac{1}{8}$ th and $\frac{1}{10}$ th of its initial conc. is $t_{1/8}$ and $t_{1/10}$.

The value of $\left(\frac{t_{\frac{1}{8}}}{t_{\frac{1}{10}}}\right) \times 10 =$

Take : $\log 8 = 0.90, \log 7 = 0.84, \log 9 = 0.95$

(1) 9 (2) 10 (3) 12 (4) 8

Ans. **(3)**

6. Consider the following nickel complexes:

$A = [Ni(CN)4]2^-$

$B = [Ni(CO)4]$

$C = [NiCl4]2^-$

Which of the following options correctly describes the magnetic behaviour (paramagnetic/diamagnetic) of these complexes?

(1) A, B are diamagnetic; C is paramagnetic (2) A, B are paramagnetic; C is diamagnetic

(3) A, C are diamagnetic; B is paramagnetic (4) A, C are paramagnetic; B is diamagnetic

Ans. **(1)**

7. For equivalence point X ml of 0.02 M HCl is treated with 5 mL of 0.02 M of a weak base. The pK_b of weak base is 5.69 and the pH of the resulting solution is Y at half of th re point. The value of ($x + y$) is:

(1) 5 (2) 8.81 (3) 13.31 (4) 3.81

Ans. **(3)**

8. Choose the correct statements in respect of hydrides of Group-15.

A. Reducing power increasing down the group.

B. Basic nature increases down the group.

C. Stability decreases down the group.

D. Boiling point decreases regularly down the group.

(1) A, B and C only (2) A, B and D only (3) A and C only (4) B, C and D only

Ans. **(3)**

9. The wave number of three spectral lines of H -atom are given. Identify the correct set of spectral lines belonging to Balmer series

(1) $\frac{5R}{36}, \frac{3R}{16}, \frac{21R}{100}$ (2) $\frac{3R}{4}, \frac{3R}{16}, \frac{7R}{144}$ (3) $\frac{7R}{144}, \frac{3R}{16}, \frac{16R}{255}$ (4) $\frac{5R}{36}, \frac{3R}{16}, \frac{21R}{24}$

Ans. **(4)**

10. Given below are two statements

Statement I : Among XeF_4, BF_4^- and SF_4 the species having equal $M - X$ bond lengths are XeF_4, and BF_4^-. (M = central atom).

Statement II : Among O_2^{2-}, O_2^-, F_2 and O_2^+ the highest bond order is for F_2 and O_2^{2-} In the light of the above statements, choose the most appropriate option.

(1) Both statement-I and statement-II are correct

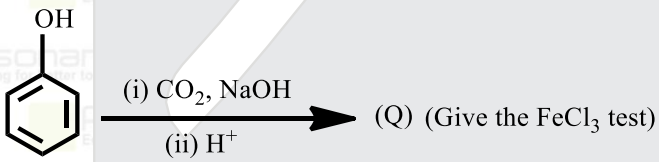
(2) Both statement-I and statement-II are incorrect

(3) Statement-I is correct but statement-II is incorrect

(4) Statement-I is incorrect but statement-II is correct

Ans. **(3)**

11.



(P)

select the correct statements

(P)Q is more acidic than P

(Q) Q & **P** both dissolved in $NaHCO_3$

(R) Only (Q) dissolved in $NaHCO_3$

(S) P&Q both dissolved in $NaHCO_3$ and H_2 gas released with Na.

Ans. **(1)**

12. Among the following coloured ion is/are

(1) T^{3+} and V^{3+} (2) Ti^{3+} and Sc^{3+} (3) Ti^{4+} and V^{3+} (4) V^{2+} and Sc^{3+}

Ans. **(1)**

13. At $T(K)$,2 moles of liquid A and 3 moles of liquid B are mixed. The vapour pressure of ideal solution SO formed is 320 mm Hg. At this stage one mole of A are mixed further, the vapour pressure is found to be 340 mm Hg. The vapour pressure of pure A and B are respectively

(1) 200 mm Hg, 400 mm Hg
(2) 440 mm Hg, 240 mm Hg
(3) 300 mm Hg, 400 mm Hg
(4) 240 mm Hg, 440 mm Hg

Ans. **(2)**

14. Observe the following reaction:

$$C_3H_6Cl_2 \xrightarrow[NaNH_2]{\text{excess}} (X) \xrightarrow[H_2O]{Hg^{2+},H^+} (Y)$$

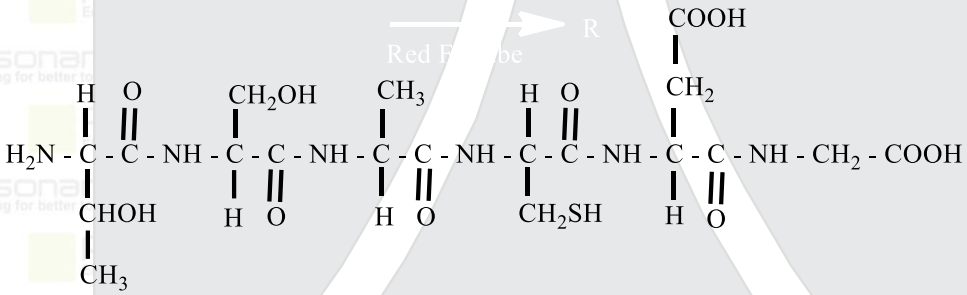
The product (Y) gives which of the following test?

(1) Tollen's test
(2) Lucas test
(3) Iodoform test
(4) Fehling's test

Ans. **(3)**

15. Consider the following polypeptide:

In the given polypeptide, Y is the essential amino acid present. The correct representation of Y and the name of amino acids in the correct sequence in polypeptide is



(1) **Y:** Polypeptide (name of amino acid) , **Thr:** Thr-Ser-Ala-Cys-Asp-Gly
(2) **Y:** Polypeptide (name of amino acid), **Ser:** Ser-Ala-Thr-Cys-Asp-Gly
(3) **Y:** Polypeptide (name of amino acid), **Thr:** Thr-Ser-Cys-Asp-Ala-Gly
(4) **Y:** Polypeptide (name of amino acid), **Ser:** Thr-Ser-Ala-Asp-Cys-Gly

Ans. **(1)**

16. Which of the following reaction is correctly matched with the product formed?

(1) $CH_3-\overset{\overset{O}{\|}}{C}-NH_2 + Br_2 + KOH \longrightarrow CH_3NH_2$

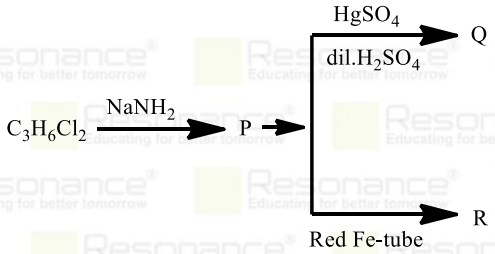
(2) $CH_3-\overset{\overset{O}{\|}}{C}-NH_2 + Br_2 + KOH \longrightarrow CH_3-CH_2-NH_2$

(3) $CH_3-CN \xrightarrow{LiAlH_4} CH_3-NH_2$

(4) $CH_3-NC \xrightarrow{LiAlH_4} CH_3-CH_2-NH_2$

Ans. **(1)**

17.



Find the Ratio of hydrogen in R & Q

Ans. **(2)**

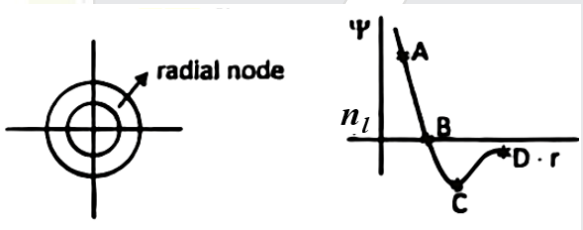
18. Match the column-I showing compounds with column-II showing suitable test for that compound

	Column-I		Column-II
(P)	$C_6H_5COCH_2CH_3$	a	lodoform test
(Q)	C_6H_5CHO	b	2, 4-DNP test
(R)	$C_6H_5CH_2CHO_2$	c	Tollen test
(S)	$C_6H_5COCH_3$	d	Fehling test

(1) P – b ; Q- b, c ; R - b, c, d ; S - a, b
(2) P - b ; Q - b, c, d ; R - b, c, d ; S - a, b, c
(3) P - a, b ; Q - b, c, d ; R - b, c, d ; S - a,b,d
(4) P - b ; Q - b, c, d; R - b, c ; S - a, b

Ans. **(2)**

19. Consider the diagram



Radical node is shown by

(1) A (2) B (3) C (4) D

Ans. **(2)**

20. Calculate the sum of number of geometrical isomers of $[MClBrNO_2CN]$, number of optically inartive isomers of $[M(OX)_2Cl_2]$ and number of geometrical isomers of $[MCl_3Br_3]$

Ans. **(12)**