



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 109

Chemistry

1. What volume of 3 molar HNO_3 is needed to oxidise 8g of Fe^{3+} , HNO_3 gets converted to NO ?

A. 8 mL

B. 16 mL

C. 32 mL

D. 64 mL

Answer: B



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2. XeO_4 molecule is tetrahedral having 'n' number of $p\pi - d\pi$ bonds. The value of 'n' is

A. 1

B. 2

C. 3

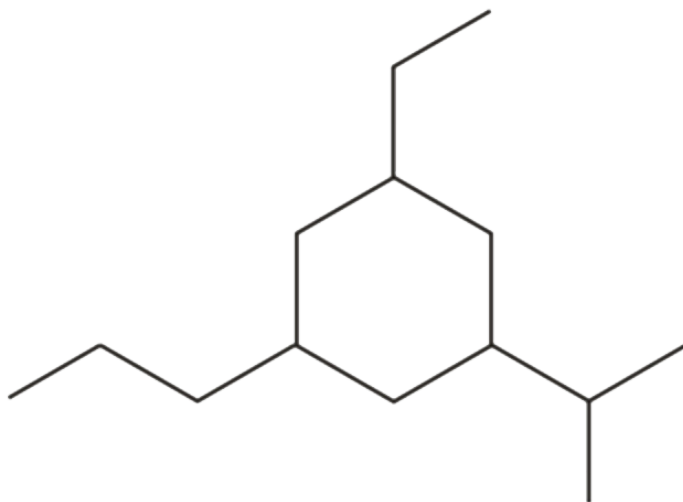
D. 4

Answer: D



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3. The correct IUPAC name the following compound is



- A. 1-ethyl-3-isopropyl-5-propylcyclohexane
- B. 1-ethyl-3-isopropyl-5-ethylcyclohexane
- C. 3-ethyl-5-isopropylpropylcyclohexane
- D. 3-ethyl-5-propyl isopropylcyclohexane

Answer: A



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4. An electron is moving with a kinetic energy of $4.55 \times 10^{-25} \text{ J}$. What will be Broglie wavelength for this electron ?

A. $7.2 \times 10^{-7} \text{ m}$

B. $72 \times 10^{-7} \text{ m}$

C. $0.72 \times 10^{-7} \text{ m}$

D. $4.2 \times 10^{-7} \text{ m}$

Answer: A



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5. Sodium is not observed in +2 state because is

A. Large ionic radius

B. High IE_1

C. High IE_2

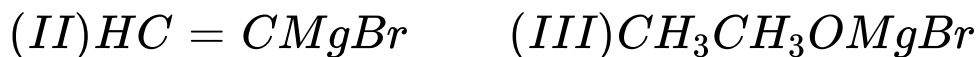
D. High EA

Answer: C



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6. Arrange in order of decreasing basicity



A. I, II, III

B. I, III, II

C. III, II, I

D. II, I, III

Answer: A



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7. For one mole of gas the average kinetic energy is given as E . The U_{rms} of gas is :

A. $\left[\frac{2E}{M} \right]^{1/2}$

B. $\left[\frac{3E}{M} \right]^{-1/2}$

C. $\left[\frac{2E}{2M} \right]^{1/2}$

D. $\left[\frac{3E}{2M} \right]^{1/2}$

Answer: A



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8. 1-Penten-4-yne reacts with 1 mol bromine at -80°C to produce :

- A. 4,4,5,5-Tetrabromopentene
- B. 1,2-Dibromo-1,4-pentadiene
- C. 1,1,2,2,4,5-Hexabromopentane
- D. 4,5-dibromopentyne

Answer: D



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9. In N_2O , the N - N distance pertains to

A. $N = N$ bond

B. $N \equiv N$ bond

C. N - N bond

D. Intermediate of $N = N$ and $N \equiv N$

Answer: D



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10. Each unit cell of NaCl consists of 4 chloride ions and

A. $13Na^+$ ions

B. $4Na^+$ ions

C. $6Na^+$ ions

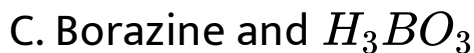
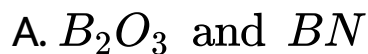
D. $8Na^+$ ions

Answer: B



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11. Which pair of products are formed when amorphous boron is burned in air?



Answer: A



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12. Which of the following will not form iodoform with $I_2 / \bar{O}H$?

- A. Ethanol
- B. Ethanal
- C. Isopropyl alcohol
- D. Benzyl alcohol

Answer: D



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13. For a dilute solution containing $2.5g$ of a non-volatile non-electrolyte solution in $100g$ of water, the elevation in boiling point at 1 atm pressure is $2^\circ C$. Assuming concentration of solute is much lower than the concentration of solvent, the vapour pressure (mm of Hg) of the solution is:

(take $k_b = 0.76Kkgmol^{-1}$)

A. 718

B. 736

C. 724

D. 740

Answer: C



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14. The equilibrium constants for the reactions are

$\text{H}_3\text{PO}_4 \rightleftharpoons \text{H}_2\text{PO}_4^- \quad (K_1)$

$\text{H}_2\text{PO}_4^- \rightleftharpoons \text{HPO}_4^{2-} \quad (K_2)$

The equilibrium constant for H_3PO_4

A. $K_1 / K_2 / K_3$

B. $K_1 \times K_2 \times K_3$

C. $K_2 / K_1 K_3$

D. $K_1 + K_2 + K_3$

Answer: B

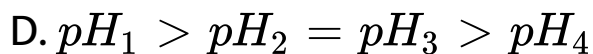
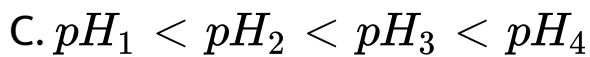


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15. The correct relationship between the pH of isomolar solutions of sodium oxide (pH_1), sodium sulphide (pH_2), sodium selenide (pH_3) and sodium telluride (pH_4) is

A. $pH_1 > pH_2 > pH_3 > pH_4$

B. $pH_1 < pH_2 < pH_3 < pH_4$

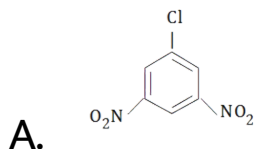


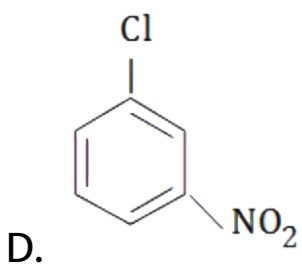
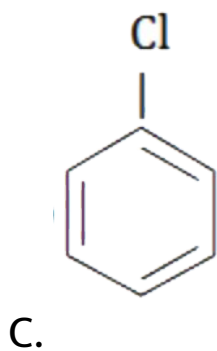
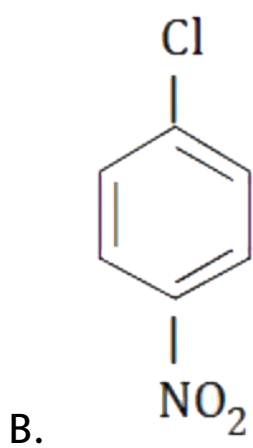
Answer: A



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16. Which of the aromatic compounds reacts fastest with methoxide ion?



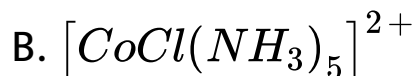
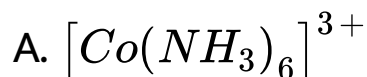


Answer: B



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17. The correct order for the wavelength of absorption in the visible region is

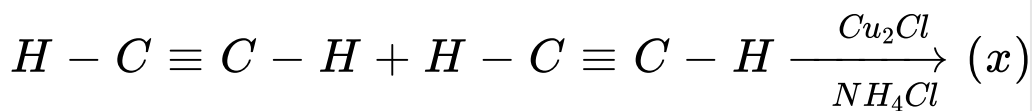


Answer: A

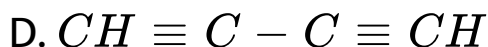
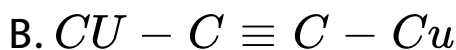


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18. In the reaction given below



, 'X' will be

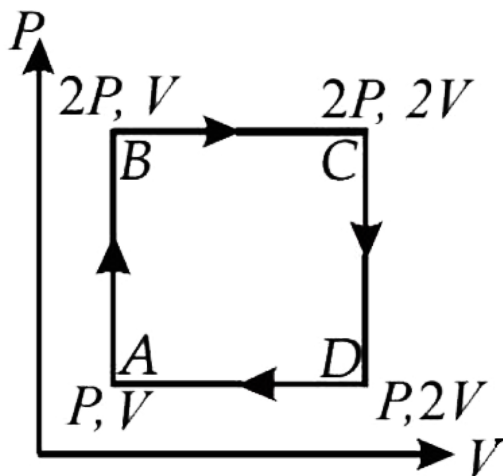


Answer: D



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19. An ideal monoatomic gas is taken round the cycle ABCDA as shown in the P-V diagram. The work done during the cycle is



- A. $-PV$
- B. $-2PV$
- C. $-\frac{1}{2}PV$
- D. 0

Answer: A



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20. The $E_{M^{3+}/M^{2+}}$ values for Cr , Mn , Fe and Co are 0.41 , $+1.57$, $+0.77$ and $+1.97V$ respectively. For which one of these metals the change in oxidation state from $= 2$ to 3 is easiest :

A. Co

B. Mn

C. Fe

D. Cr

Answer: D



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21. An ore after levigation is found to have basic impurities. Which of the following can be used as flux during smelting ?

A. H_2SO_4

B. $CaCO_3$

C. SiO_2

D. Both B and C

Answer: B



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22. Le Chatelier's Principle

A. Transport of oxygen by haemoglobin in blood

B. Removal of CO_2 from tissues by blood

C. Tooth decay due to use of sweet substances

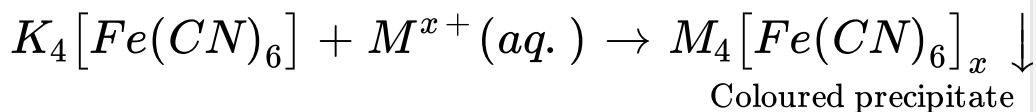
D. All of the above

Answer: D

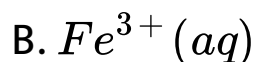
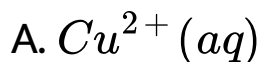


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23.



Which of the following cation does not respond to the above reaction?



C. Zn^{2+} (aq)

D. None of these

Answer: C



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24. Which of the following statement is correct regarding gluconic acid?

A. Gluconic acid is a dicarboxylic acid

B. Gluconic acid is obtained by oxidation of glucose with HNO_3

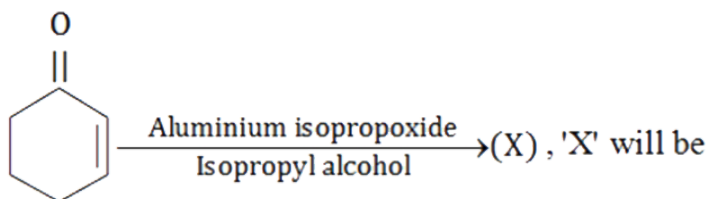
C. Gluconic acid can form cyclic (acetal/hemiacetal) structure

D. Gluconic acid is a partial oxidation product of glucose

Answer: D

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25. In the given reaction



- A. Cyclohexanol
- B. Cyclohex-2-en-1-ol
- C. Cyclohexanone
- D. Benzene

Answer: B



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26. In the given reaction



be

A. Monobasic acid

B. Acid anhydride

C. Cyclic ketone

D. Open chain ketone

Answer: C



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27. Molar heat capacity at constant P for a substance is equal to

A. $(\partial U / \partial T)_v$

B. $(\partial H / \partial T)_v$

C. $(\partial U / \partial T)_p$

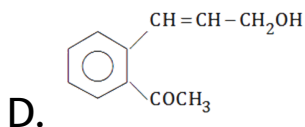
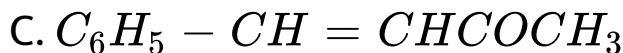
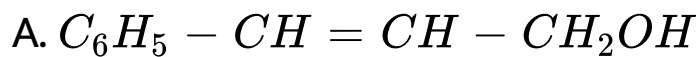
D. $(\partial H / \partial T)_p$

Answer: D



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28. An organic compound containing one oxygen gives red colour with ceric ammonium nitrate solution, decolourise alkaline $KMnO_4$, respond iodoform test and show geometrical isomerism. It should be :



Answer: B



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29. Chlorine gas is passed into a solution containing KF, KI and KBr and $CHCl_3$ is added.

The initial colour in $CHCl_3$ layer is

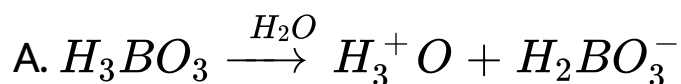
- A. Violet due to formation of I_2
- B. Orange due to formation of Br_2
- C. Colourless due to formation of F_2
- D. No colour change due to no reaction

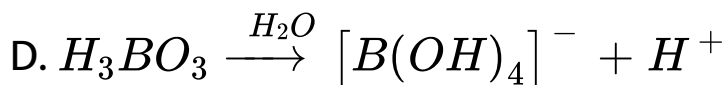
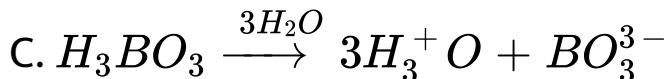
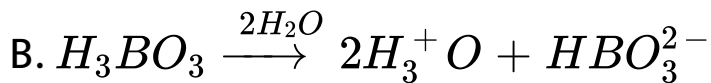
Answer: A



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30. Which of the following correctly explains the nature of boric acid in aqueous medium :





Answer: D



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31. Which of the following statements is not true regarding rayon?

A. It is pure regenerated cellulose

B. It is obtained by dissolving wood pulp in alkaline CS_2

C. It is obtained by passing Na-salt of cellulose xanthate through spinneret into aqueous $NaHCO_3$ solution

D. It is extracted as fibres of cellulose

Answer: B



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32. A Complex P of composition $Cr(H_2O)_6Br_n$ has a spin only magnetic moment of $3.83BM$. It reacts with $AgNO_3$ and shows geometrical isomerism. The IUPAC nomenclature of P is

A. Hexaaqua chromium (III) bromide

B. Dibromidotetraqua chromium (IV) bromide dihydrate

C. Tetraaquadibromido chromium (IV) bromide dihydrate

D. Tetraaquadibromido chromium (III) bromide
dihydrate

Answer: D



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33. Which is correct in case of van der Waals adsorption?

- A. High temperature, low pressure
- B. Low temperature, high pressure
- C. Low temperature, low pressure

D. High temperature, high pressure

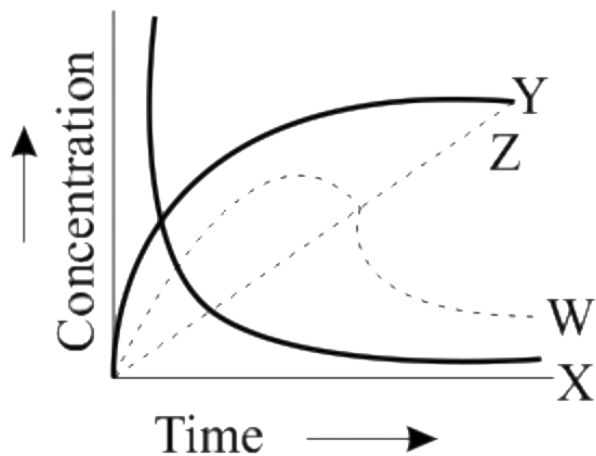
Answer: B



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34. For the reaction, $A + B \rightarrow C + D$. The variation of the concentration of the products is

given by the curve.



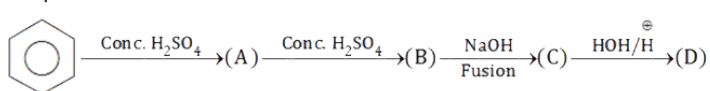
- A. X
- B. Y
- C. Z
- D. W

Answer: B



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35. Identify products of each step of given reaction sequence



A. 1,3-dihydroxy benzene

B. 1,2-dihydroxy benzene

C. 1,4-dihydroxy benzene

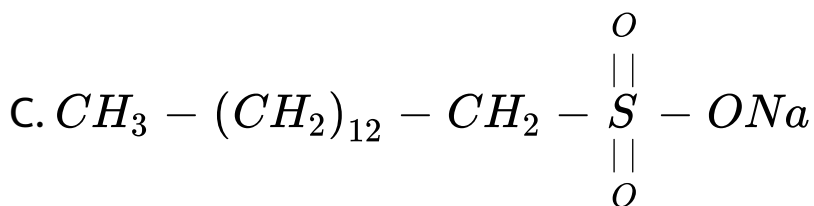
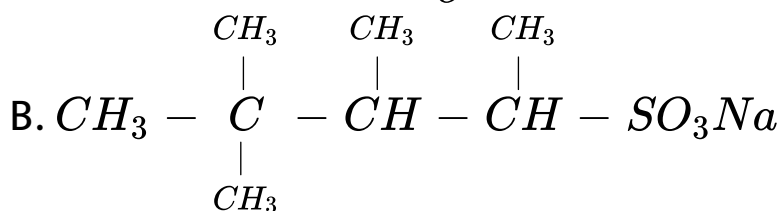
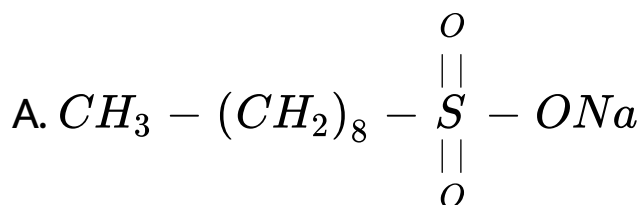
D. Phenol

Answer: A



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36. Which of the following is not a biodegradable detergent ?



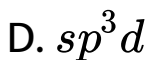
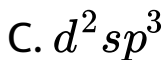
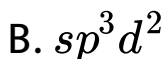
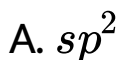
D. All of these

Answer: B



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37. Ferrocene is diamagnetic in nature. According to valence bond theory the hybrid state assumed by Fe in ferrocene is

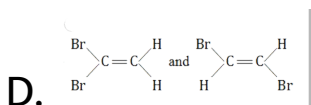
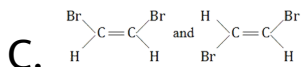
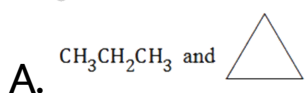


Answer: C



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38. Which of the following pairs represents constitutional isomers ?



Answer: D



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39. A compound contains 28% N and 72% of a metal by weight . Three atoms of metal combine with two atoms of N . Find the atomic weight of metal.

A. 12

B. 32

C. 24

D. 16

Answer: C



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40. The total number of lone - pairs of electrons and sp^3 hybridized nitrogen atoms in melamine are respectively

A. 6,6

B. 3,3

C. 6,3

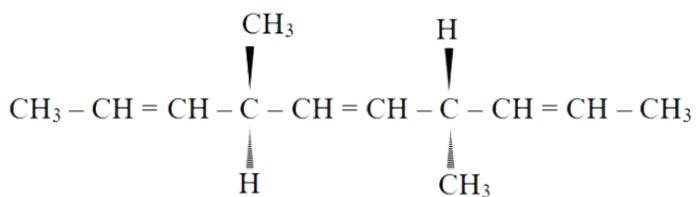
D. 3,6

Answer: C



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41. The total number of optically inactive products obtained from the complete ozonolysis of the compound given below here is



A. 2

B. 4

C. 1

D. 0

Answer: B



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42. A compound $CuCl$ has face – centred cubic structure. Its density is $3.4gcm^{-3}$. What is the length of unit cell ?

A. 5.783 Å

B. 7.783 Å

C. 6.783 Å

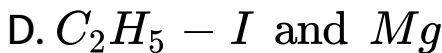
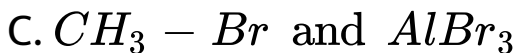
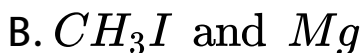
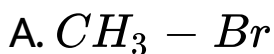
D. 8.783 Å

Answer: A



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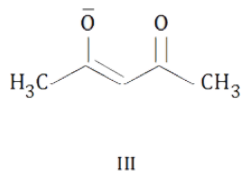
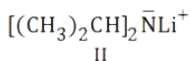
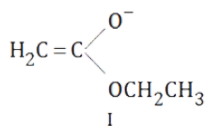
43. 1 – phenylethanol can be prepared by reaction of benzaldehyde with



Answer: B



44. Rank the compounds given below in order of decreasing basicity



A. I,II,III

B. III,II,I

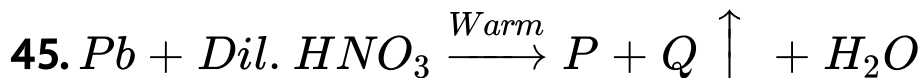
C. II,III,I

D. II,I,III

Answer: D



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Incorrect statement for Q is:

A. Paramagnetic colourless gas

B. It is oxidized to paramagnetic coloured gas
by air

C. It combines with $Fe_2(SO_4)_3$

D. it is also obtained by disproportionation of
 HNO_2

Answer: C



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