JEE Main 2024 Chemistry Question Paper Jan 31 Shift 1

1. Which of the following is amphoteric?
(1) GeO & GeO2
(2) SnO2 & PbO2
(3) SiO2 & GeO2
(4) CO & SiO2

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2. Match the following:

A) Glucose + HI	i) Gluconic acid
B) Glucose + NaBH4	ii) n-Hexane
C) Glucose + Br2 . H2O	iii) Sorbitol
D) Glucose + HNO3	iv) Saccharic acid

(1) A - iii, B - iii, C - i, D - iv
(2) A - i, B - iii, C - ii, D - iv
(3) A - i, B - ii, C - iv, D - iii
(4) A - iii, B - ii, C - iv, D - i

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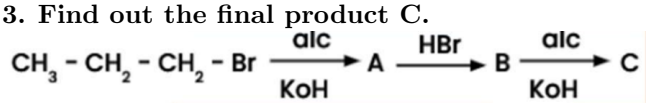
3. Find out the final product C.



(1) Propan - 1 - ol
(2) Propan - 2 - ol
(3) Propene
(4) Propane

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4. Which compound is white in colour in aqueous medium?
(1) ZnSO4
(2) CuSO4
(3) FeSO4
(4) FeCl3

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5. On which factor does the electrical conductivity of an electrolytic cell not depend?
(1) Concentration of electrolyte
(2) Amount of electrolyte added
(3) Temperature
(4) Nature of electrode

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6. Decreasing order of electron gain enthalpy of the following elements (magnitude only): Sulphur - A, Bromine - B, Fluorine - C, Argon - D
(1) A ¿ B ¿ C ¿ D
(2) D ¿ C ¿ B ¿ A
(3) C ¿ B ¿ A ¿ D
(4) A ¿ B ¿ D ¿ C

7. If one faraday of electricity is used in the discharging of Cu^{2+}, then find the mass (in g) of Cu deposited.
(1) 31.75 g
(2) 45.9 g
(3) 65.3 g
(4) 27.5 g

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8. Statement I: Dichromates are generally made from chromates. Statement II: Manganate ions are diamagnetic.
(1) Both statement I and statement II are false
(2) Statement I is true but statement II is false
(3) Statement I is false but statement II is true
(4) Both statement I and statement II are true

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9. Which has the highest electron gain enthalpy?
(1) F
(2) Cl
(3) Br
(4) I

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10. Which of the following gives positive deviation from Raoult's Law?
(1) Ethanol + acetone
(2) Benzene + toluene
(3) Acetone + chloroform
(4) Chloroethane + bromoethane

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11. Assertion: Noble gases have very high boiling point. Reason: Noble gas have weak dispersion forces.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.

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12. Statement I: pKa value of Phenol and ethanol is 10.0 and 15.9 respectively. Statement II: Ethanol is more acidic than phenol.
(1) Both statement I and statement II are false
(2) Statement I is true but statement II is false
(3) Statement I is false but statement II is true
(4) Both statement I and statement II are true

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13. Which of the following does not give colour with conc. H_2SO_4?
(1) NaBr
(2) CaF2
(3) NaNO3

(4) I^-

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14. Which of the following have six electrons in carbon?
(1) Carbocation
(2) Carbanion
(3) Carbon free radical
(4) None of the above

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15. Adsorption method is used in:
(1) Chromatography
(2) Extractional method
(3) Distillation method
(4) Sublimation

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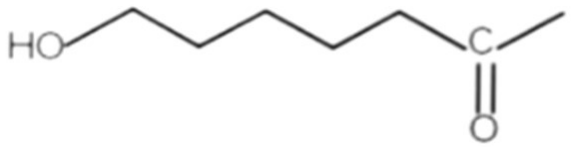
16. Correct IUPAC name of the following compound:



(1) 7-Hydroxyheptan-2-one
(2) 6-Hydroxyheptan-2-one
(3) 2-Oxoheptan-7-ol
(4) 1-Hydroxy-6-oxoheptane

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17. White colour compound is
(1) Ammonium molybdate
(2) Ammonium sulphide
(3) Lead sulphate
(4) Lead iodide

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18. Statement I: Alcohols can act as nucleophile as well as electrophile. Statement II: Alcohols react with metals to form alkoxide and liberate H2.
(1) Both statement I and statement II are false
(2) Statement I is true but statement II is false
(3) Statement I is false but statement II is true
(4) Both statement I and statement II are true

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19. How many of the following compounds have sp^3 hybridized central atom? H_2O, NH_3, SiO_2, SO_2, CO and BF_3

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20. Moles of CH_4 required for formation of 22 g of CO_2 is m $\times 10^2$. The value of m is:

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21. The total number of different alkanes formed when the following mixture is subjected to electrolysis: CH_3COONa (aq) and C_2H_5COONa (aq)

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22. Which of the following are generally used in batteries?

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23. Number of Geometrical Isomers of $[Pt(en)_2Cl_2]$
