

JEE Main 2024 Chemistry Question Paper Jan 30 Shift 1 (B.E./B.Tech)

JEE Main Chemistry Questions

Ques 1. Rms velocity of hydrogen at which temperature is equal to that of the oxygen molecule at 47 degree

Ans. 20

Ques 2. Find out sum of the coefficients of all the species involved in the

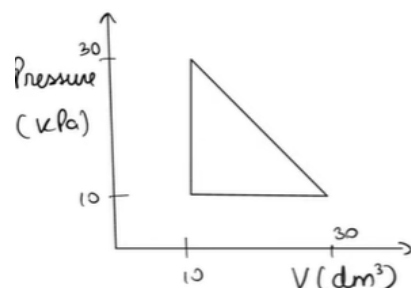
balanced equation: $2\text{MnO}_4^- + \text{I}^- \xrightarrow[\text{medium}]{\text{Alkaline}}$

Ans. 9

Ques 3. Find out the maximum number of hybrid orbitals formed when 2s and 2p orbitals are mixed.

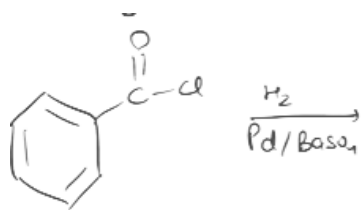
Ans. 4

Ques 4. Find the work done in the following cyclic process (in J)



Ans. 200J

Ques 5. What is the name of a given reaction?



- A. Etard Reaction
- B. Stephen's Reaction
- C. Wolff Kishner Reduction
- D. Rosenmund Reaction

Ans. D

Ques 6. Which of the given compounds will not give the Fehling test?

- A. Lactose
- B. Maltose
- C. Sucrose
- D. Glucose

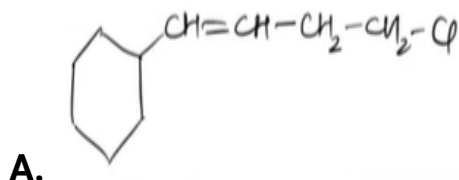
Ans. C

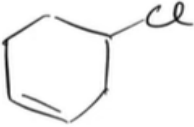
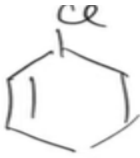
Ques 7. Which of the following set contains both diamagnetic ions

- A. Ni^{2+} , Cu^{2+}
- B. Eu^{3+} , Gd^{3+}
- C. Cu^{+} , Zn^{2+}
- D. Ce^{4+} , Pm^{3+}

Ans. C

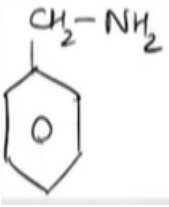
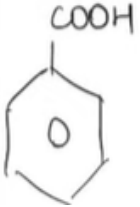
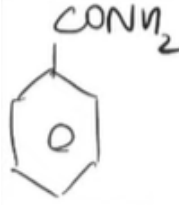
Ques 8. Which of the following has allylic halogen?



- B. 
- C. 
- D. $\text{CH}_3-\text{CH}(\text{Cl})-\text{CH}_2$

Ans. C

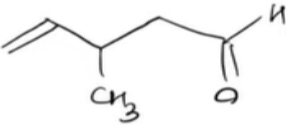
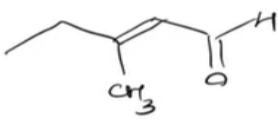
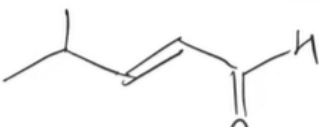
Ques 9. Find the final product of reaction given below

- A. 
- B. 
- C. 
- D. 

Ans. A

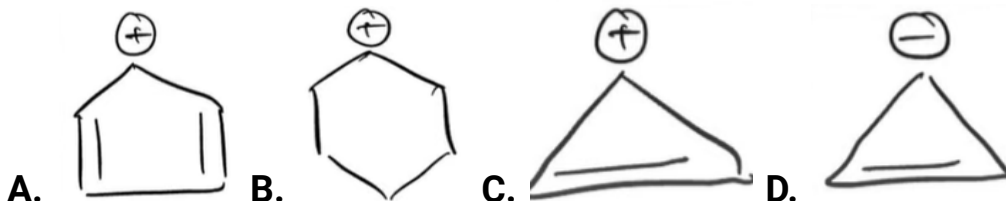
Ques 10. Which of the following is the correct structure for the given IUPAC name?

3-Methylpent-2-enal

- A. 
- B. 
- C. 
- D. 

Ans. B

Ques 11. Which of the following compound or ion is most stable?



Ans. C

Ques 12. Statement I: For hydrogen atom, 3p and 3d are degenerate

Statement II: Degenerate orbitals have the same energy.

- A. Both statements I and II are correct.
- B. Both statements I and II are incorrect.
- C. Statement I is correct, statement II is incorrect.
- D. Statement I is incorrect, statement II is correct.

Ans. A

Ques 13. What is the geometry of Aluminium chloride in aqueous solution

- A. Square planar
- B. Octahedral
- C. Tetrahedral
- D. Square pyramidal

Ans. B

Ques 14. The number of atoms in the silver plate having area 0.05 cm^2 , and thickness 0.05 cm is $\times 10^{19}$.

Density of silver is 7.9 g/cm^3

Ans. 11

Ques 15. The group number of unununnium is:

- A. 11
- B. 12
- C. 6
- D. 14

Ans. A

Ques 16. The ratio of magnitude of potential energy and kinetic energy for 5th excited state of hydrogen atom is

Ans. 2

Ques 17. Choose the correct option

Molecule	Shape
(a) BrF ₅	(i) Sea-saw
(b) H ₂ O	(ii) T-Shape
(c) ClF ₃	(iii) Bent
(d) SF ₄	(iv) Square Pyramidal

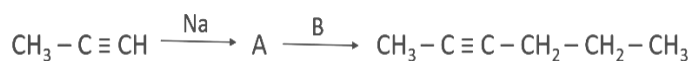
- A. (A)- iv; (B) - iii; (C) - ii; (D) - i
- B. (A)-iv; (B) - iii; (C) - i; (D) - ii
- C. (A)-iii; (B)-iv; (C) - ii; (D) - i
- D. (A)-iii; (B) - iv; (C) - i; (D) - ii

Ans. A

Ques 18. 250 mL solution of CH₃COONa of molarity 0.35 M is prepared. What is the mass of CH₃COONa required in grams (Nearest Integer)

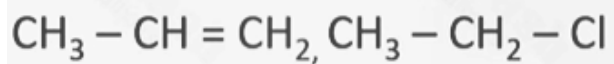
Ans. 7

Ques 19. Consider the following sequence of reactions:

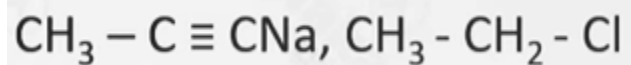


Select A and B respectively.

A.



B.



C.

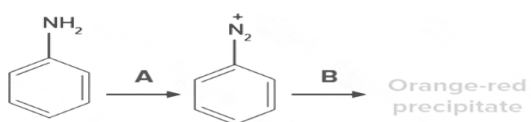


D.



Ans. C

Ques 20. Consider the following sequence of reactions:



Select the option with correct A & B respectively.

A. HNO_3 , Phenol

B. NaNO_2/HCl , Phenol

C. HNO_3 , Aniline

D. NaNO_2/HCl , Aniline

Ans. B