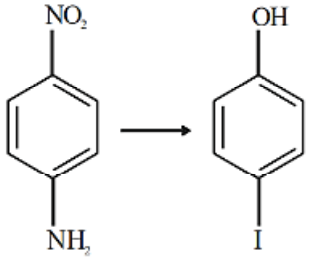
JEE MAIN : CHAPTER WISE TEST PAPER-10

SUBJECT :- CHEMISTRY **DATE.....**
CLASS :- 12th **NAME.....**
CHAPTER :- AMINES **SECTION.....**

(SECTION-A)

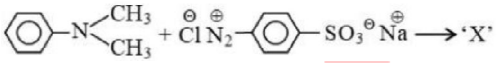
1. Which among following compound is a secondary amine ?
(A) hexane-1, 6-diamine
(B) N,N-Dimethylebnzenamine
(C) N-methylbenzenamine
(D) Prop-2-en-lamine

2. The correct sequential order of the reagents for the given reaction is



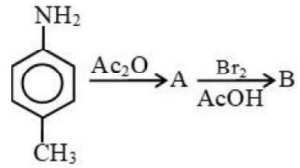
(A) HNO_2, Fe/H^+, HNO_2, KI, H_2O/H^+
(B) HNO_2, KI, Fe/H^+, HNO_2, H_2O/ warm
(C) HNO_2, KI, HNO_2, Fe/H+, H_2O/H^+
(D) HNO_2, Fe/H^+, KI, HNO_2, H_2O/ warm

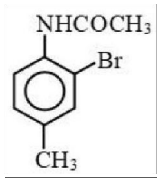
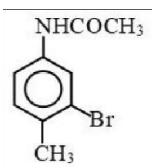
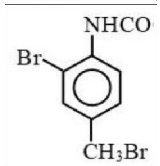
3.



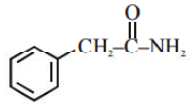
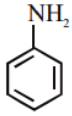
formed product 'X' is used as
(A) Lab test of phenol
(B) Acid base titration indicator
(C) As food grade colourant
(D) In protein estimation as an alternative to ninhydrin

4. A and B are in the given reaction ?



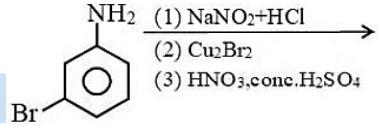
(A) 
(B) 
(C) 
(D) 

5. Which of the following compound can be prepared in good yield by Gabriel phthalimide synthesis?

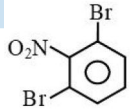
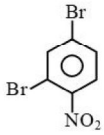
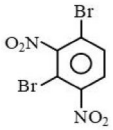
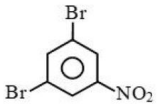
(A) 
(B) 
(C) $CH_3–CH_2–NHCH_3$
(D) 

6. Which among following compound is a primary amine?
(A) Ethyl methyl propyl amine
(B) Hexamethylene diamine
(C) Diphenyl amine
(D) N,N-Dimethyl aniline

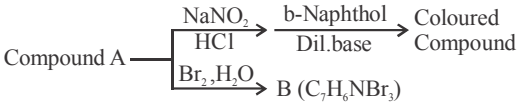
7.



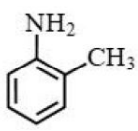
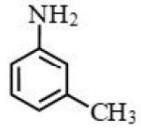
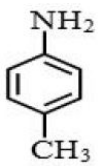
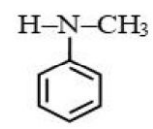
The major product for above sequence of reaction is :

(A) 
(B) 
(C) 
(D) 

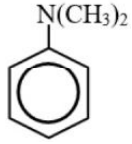
8.

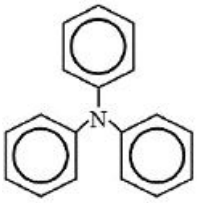
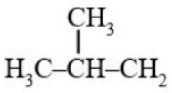


Compound A will be :

(A) 
(B) 
(C) 
(D) 

9. Which of the following is an example of symmetrical tertiary amine ?

(A) CH_3NHCH_3 (B) 

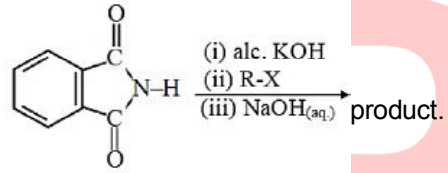
(C)  (D) 

10. Identify the Gabriel phthalimide synthesis reaction from the reactants and reagents used in it.

(A) $R–C\equiv N + [H] \xrightarrow[\text{ether}]{LiAlH_4}$ product

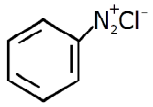
(B) $R–CO–NH_2 + [H] \xrightarrow[\text{ether}]{LiAlH_4}$ product

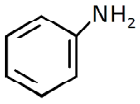
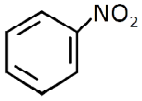
(C) $R–CO–NH_2 + Br_2 + 4NaOH(aq) \xrightarrow{\Delta}$ product

(D) 

product.

11. Which of the following compounds will be suitable for Kjeldahl's method of nitrogen estimation ?

(A)  (B) 

(C)  (D) 

12. Identify molecular formula of pyridine from following.

(A) $C_5H_{11}N$ (B) C_4H_4S (C) C_4H_4O (D) C_5H_5N

13. Match List I with List II

List I

A. Benzenesulphonyl chloride
B. Hoffmann bromamide reaction
C. Carbylamine reaction
D. Hoffmann orientation

List II

I. Test for primary amines
II. Anti Saytzeff
III. Hinsberg reagent of Isocyanates
IV. Known reaction of Isocyanates.

Choose the correct answer from the options given below :

(A) A-IV, B-III, C-II, D-I
(B) A-IV, B-II, C-I, D-III
(C) A-III, B-IV, C-I, D-II
(D) A-IV, B-III, C-I, D-II

14. Identify Hinsberg reagent from following.

(A) Benzenesulphonly chloride
(B) Beynzyl chloride
(C) Benzoyl chloride
(D) Benzene diazonium chloride

15. Which of the following reaction does not match correctly with its name ?

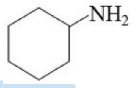
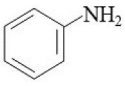
(A) $R–NH_2 + 3R – X \rightarrow$ Hoffmann exhaustive alkylation

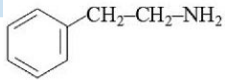
(B) $R – CO – NH_2 + Br_2 + 4KOH \rightarrow$: Hoffmann degradation

(C) $R – CO – NH_2 + 4[X] \xrightarrow{LiAlH_4}$: Mendius reduction

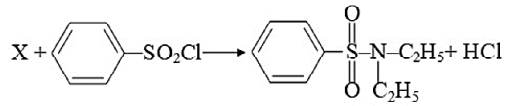
(D) $R – CH_2 – \overset{\oplus}{N}–(R)_3\ \overset{\oplus}{X} \xrightarrow[(ii)\,\Delta,-H_2O]{(i)\,moist\,Ag_2O}$ Hoffmann elimination

16. Which one of the following is an aromatic amine ?

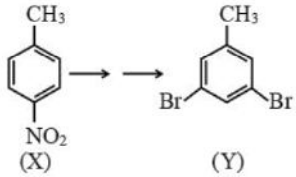
(A)  (B) 

(C)  (D) $C_5H_9 – NH_2$

17. Identify compound X in the following reaction



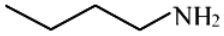
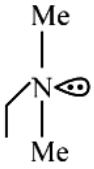
(A) $(C_2H_5)_3 – N$ (B) $C_2H_5–NH_2$
(C) $(C_2H_5)_2 – NH$ (D) $CH_3–NH–C_2H_5$

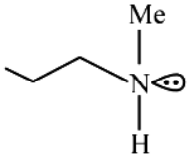
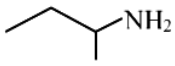
18. 

In the above conversion of compound (X) to product (Y), the sequence of reagents to be used will be :

(A) (i) Fe,H^+, (ii) Br_2(aq), (iii) HNO_2, (iv) CuBr
(B) (i) Fe,H^+, (ii) Br_2(aq), (iii) HNO_2, (iv) H_3PO_2
(C) (i) Br_2,Fe (ii) Fe, H^+ (iii) $LiAlH_4$
(D) (i) Br_2(aq), (ii) $LiAlH_4$ (iii) H_3O^+

19. An organic [A] ($C_4H_{11}N$), Shows optical activity and gives N_2 gas on treatment with HNO_2. The compound [A] reacts with $PhSO_2Cl$ producing a compound which is soluble in KOH. The structure of A is :

(A)  (B) 

(C)  (D) 

20. Given below are two statements : one is labelled as Assertion (A) and the other is labelled as Reason (R) :

Assertion (A): α – halocarboxylic acid on reaction with dil NH_3 gives good yield of α – amino carboxylic acid whereas the yield of amines is very low when prepared from alkyl halides.

Reason (R): Amino acids exist in zwitter ion form in aqueous medium.

In the light of the above statements, choose the correct answer form the option given below:

(A) (A) is not correct but (R) is correct

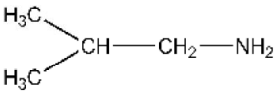
(B) Both (A) and (R) correct and (R) is the correct explanation of (A)

(C) Both (A and (R) are correct but (R) is not the correct explanation of (A)

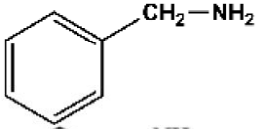
(D) (A) is correct but (R) is not correct

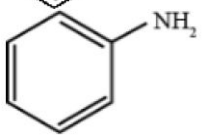
(SECTION-B)

21. The total number of amines among the following which can be synthesized by Gabriel synthesis is___.

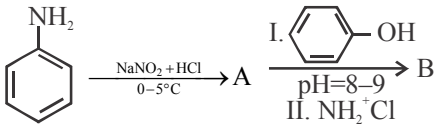
(1) 

(2) $CH_3CH_2NH_2$

(3) 

(4) 

22. A reaction of 0.1 mole of Benzylamine with bromomethane gave 23 g Benzyl trimethyl ammonium bromide. The number of moles of bromomethane consumed in this reaction are $n \times 10^{-1}$, when n = _____. (Round off to the Nearest Integer).(Given: Atomic masses: C : 12.0 u, H : 1.0 u, N : 14.0 u,Br : 80. 0 u]

23. 

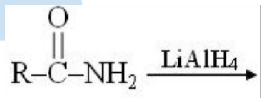
If molar mas of compound B is x then find $\frac{X}{2}$.

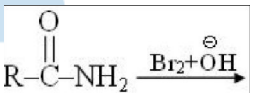
24. The total number of reagents from those given below, that can convert nitrobenzene into aniline is _____. (Intergern answer)

I. Sn-HCl	II. Sn-NH_4OH
III. Fe-HCl	IV. Zn-HC1
V. H_2-Pd	VI. H_2-Raney Nickel

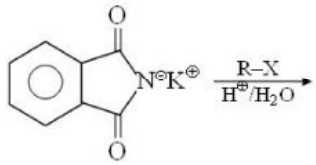
25. The following reactions, how many reactions, are used for the preparation of amines.

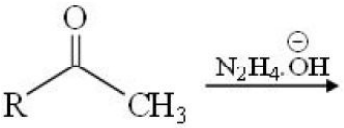
(a) R .C ≡ $\xrightarrow{LiAlH_4}$

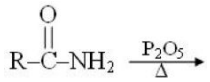
(b) 

(c) 

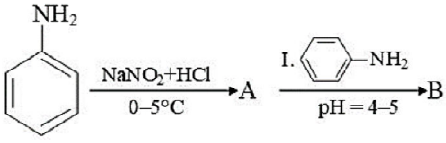
(d) R-COOH $\xrightarrow{N_3H/H^+}$

(e) 

(f) 

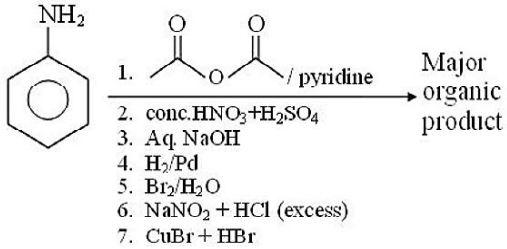
(g) 

(h) $R–CH_2–NO_2 \xrightarrow{N_2.Ni}$

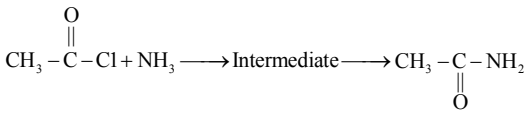
26. 

If molar mass of compound B is X then find X.

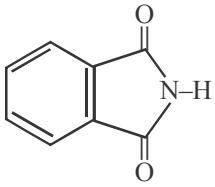
27. Total number of bromine atom present in major organic product is :



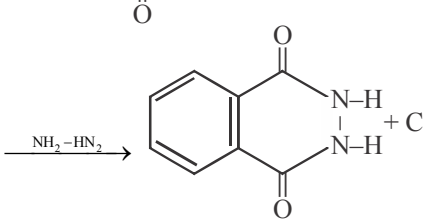
28. What will be the net charge on intermediate formed in the reaction shown below ?



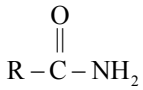
29.



A



The molecular weight of the product C will be :
(N=14, C=12, H=1, Br=79, F=19))

30.  + xNaOH + Br_2 ⟶ R–NH_2 + 2NaBr + Na_2CO_3 + H_2O

Number of moles of NaOH used in above Hoffmann bromamide reaction is :