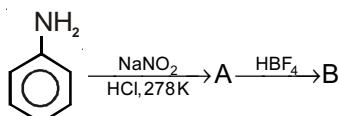


Amines

1. In the chemical reactions,

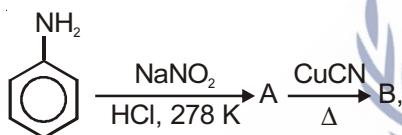


the compounds 'A' and 'B' respectively are

[AIEEE-2010]

- (1) Nitrobenzene and chlorobenzene
- (2) Nitrobenzene and fluorobenzene
- (3) Phenol and benzene
- (4) Benzene diazonium chloride and fluorobenzene

2. In the chemical reactions



The compounds A and B respectively are

[AIEEE-2011]

- (1) Phenol and bromobenzene
- (2) Fluorobenzene and phenol
- (3) Benzene diazonium chloride and benzonitrile
- (4) Nitrobenzene and chlorobenzene

3. A compound with molecular mass 180 is acylated with CH_3COCl to get a compound with molecular mass 390. The number of amino groups present per molecule of the former compound is

[JEE (Main)-2013]

- (1) 2
- (2) 5
- (3) 4
- (4) 6

4. On heating an aliphatic primary amine with chloroform and ethanolic potassium hydroxide, the organic compound formed is

[JEE (Main)-2014]

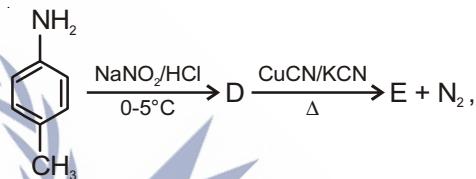
- (1) An alkanol
- (2) An alkanediol
- (3) An alkyl cyanide
- (4) An alkyl isocyanide

5. Considering the basic strength of amines in aqueous solution, which one has the smallest pK_b value?

[JEE (Main)-2014]

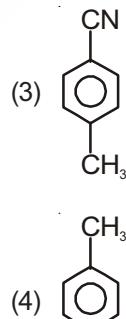
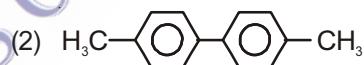
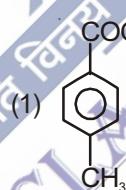
- (1) $(\text{CH}_3)_2\text{NH}$
- (2) CH_3NH_2
- (3) $(\text{CH}_3)_3\text{N}$
- (4) $\text{C}_6\text{H}_5\text{NH}_2$

6. In the reaction



the product E is

[JEE (Main)-2015]

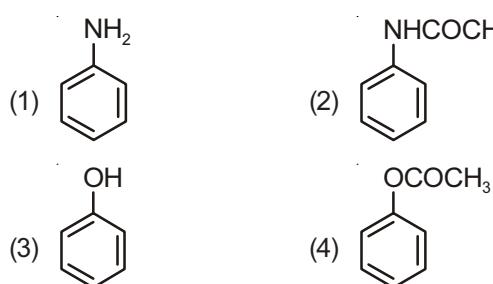


7. In the Hofmann bromamide degradation reaction, the number of moles of NaOH and Br_2 used per mole of amine produced are

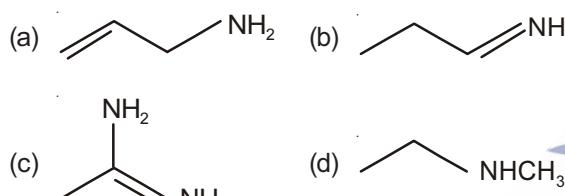
[JEE (Main)-2016]

- (1) Four moles of NaOH and two moles of Br_2
- (2) Two moles of NaOH and two moles of Br_2
- (3) Four moles of NaOH and one mole of Br_2
- (4) One mole of NaOH and one mole of Br_2

8. Which of the following compounds will form significant amount of *meta* product during mono-nitration reaction? [JEE (Main)-2017]



9. The increasing order of basicity of the following compound is [JEE (Main)-2018]

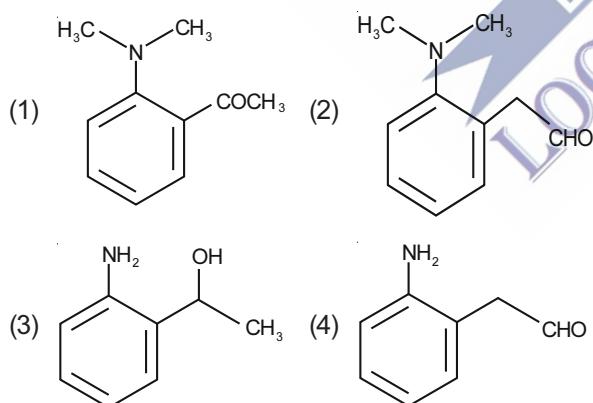


- (1) (a) < (b) < (c) < (d) (2) (b) < (a) < (c) < (d)
 (3) (b) < (a) < (d) < (c) (4) (d) < (b) < (a) < (c)

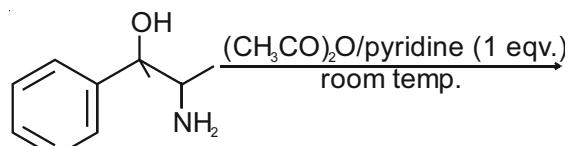
10. The tests performed on compound X and their inferences are :

Test	Inference
(a) 2,4-DNP test	Coloured precipitate
(b) Iodoform test	Yellow precipitate
(c) Azo-dye test	No dye formation

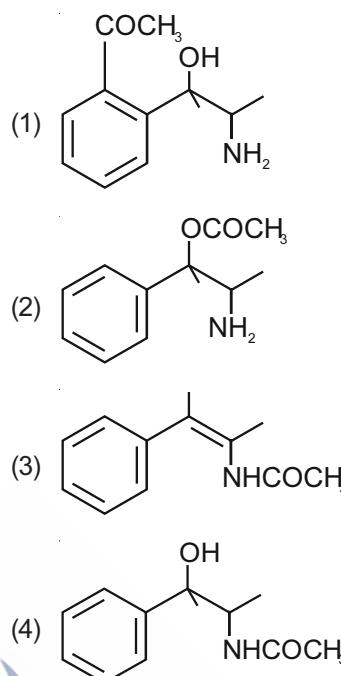
Compound 'X' is



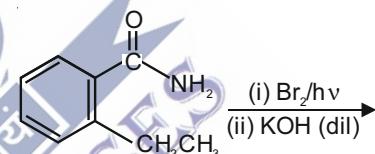
11. The major product obtained in the following reaction is



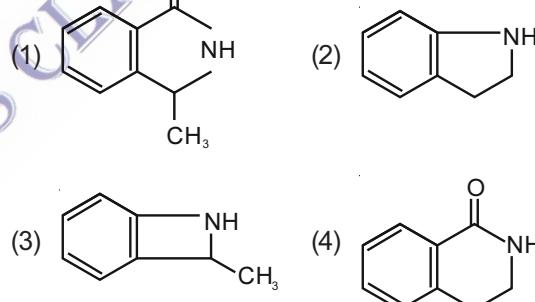
[JEE (Main)-2019]



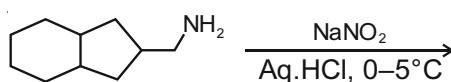
12. The major product of the following reaction



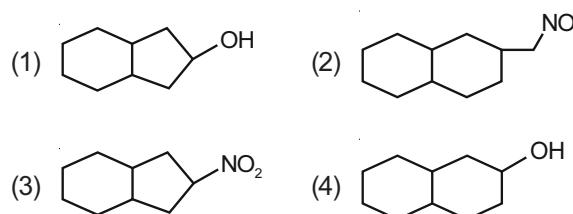
[JEE (Main)-2019]



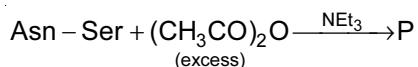
13. The major product formed in the reaction given below will be



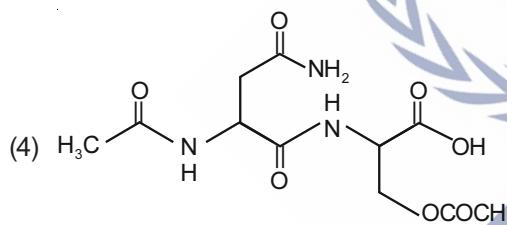
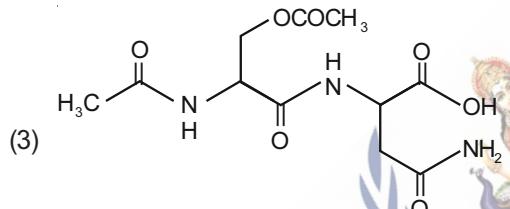
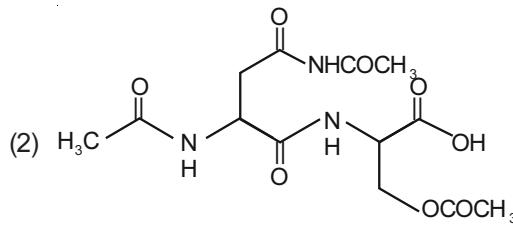
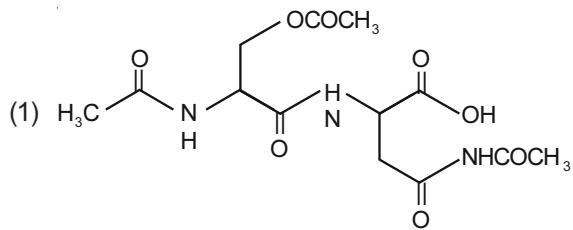
[JEE (Main)-2019]



14. The correct structure of product 'P' in the following reaction is



[JEE (Main)-2019]



15. The correct match between Item I and Item II is

Item I Item II

- | | |
|------------------------|---------|
| (A) Ester test | (P) Tyr |
| (B) Carbylamine test | (Q) AsP |
| (C) Phthalein dye test | (R) Ser |
| | (S) Lys |

[JEE (Main)-2019]

- (1) (A) → (Q); (B) → (S); (C) → (P)
 (2) (A) → (R); (B) → (Q); (C) → (P)
 (3) (A) → (Q); (B) → (S); (C) → (R)
 (4) (A) → (R); (B) → (S); (C) → (Q)

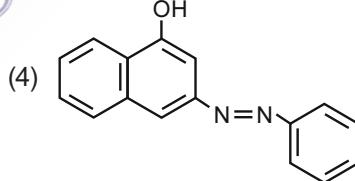
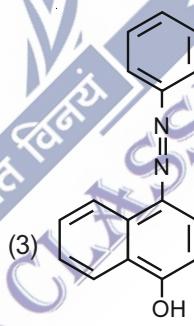
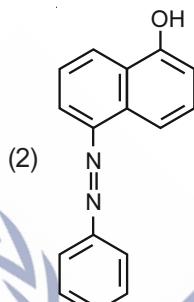
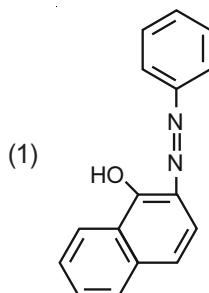
16. A compound 'X' on treatment with Br_2/NaOH , provided $\text{C}_3\text{H}_9\text{N}$, which gives positive carbylamine test. Compound 'X' is

[JEE (Main)-2019]

- (1) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CONH}_2$ (2) $\text{CH}_3\text{COCH}_2\text{NHCH}_3$
 (3) $\text{CH}_3\text{CH}_2\text{COCH}_2\text{NH}_2$ (4) $\text{CH}_3\text{CON}(\text{CH}_3)_2$

17. Coupling of benzene diazonium chloride with 1-naphthol in alkaline medium will give

[JEE (Main)-2019]



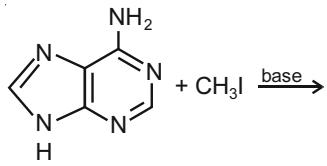
18. Which of the following amines can be prepared by Gabriel phthalimide reaction? [JEE (Main)-2019]

- (1) Neo-pentylamine
 (2) n-butylamine
 (3) t-butylamine
 (4) Triethylamine

19. In the following compounds, the decreasing order of basic strength will be [JEE (Main)-2019]

- (1) $\text{NH}_3 > \text{C}_2\text{H}_5\text{NH}_2 > (\text{C}_2\text{H}_5)_2\text{NH}$
 (2) $\text{C}_2\text{H}_5\text{NH}_2 > \text{NH}_3 > (\text{C}_2\text{H}_5)_2\text{NH}$
 (3) $(\text{C}_2\text{H}_5)_2\text{NH} > \text{NH}_3 > \text{C}_2\text{H}_5\text{NH}_2$
 (4) $(\text{C}_2\text{H}_5)_2\text{NH} > \text{C}_2\text{H}_5\text{NH}_2 > \text{NH}_3$

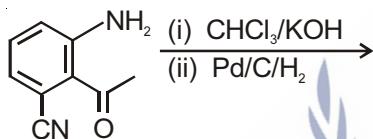
20. The major product in the following reaction is



[JEE (Main)-2019]

- (1)
- (2)
- (3)
- (4)

21. The major product obtained in the following reaction is:



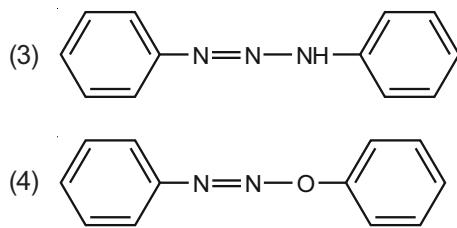
[JEE (Main)-2019]

- (1)
- (2)
- (3)
- (4)

22. Aniline dissolved in dilute HCl is reacted with sodium nitrite at 0°C. This solution was added dropwise to a solution containing equimolar mixture of aniline and phenol in dil. HCl. The structure of the major product is

[JEE (Main)-2019]

- (1)
- (2)

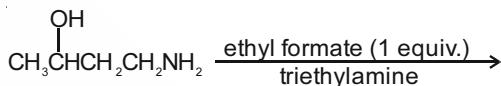


23. Hinsberg's reagent is

[JEE (Main)-2019]

- (1) $C_6H_5SO_2Cl$
 (2) $(COCl)_2$
 (3) C_6H_5COCl
 (4) $SOCl_2$

24. The major product of the following reaction is :



[JEE (Main)-2019]

- (1) $CH_3CH=CH-CH_2NH_2$
 (2) $CH_3-\overset{OH}{|}CH-\overset{CH_2}{|}CH=CH_2$
 (3) $CH_3CHCH_2CH_2NH_2$
 (4) $CH_3CHCH_2CH_2NHCHO$

25. Ethylamine ($C_2H_5NH_2$) can be obtained from N-ethylphthalimide on treatment with :

[JEE (Main)-2019]

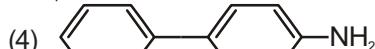
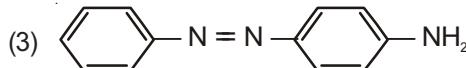
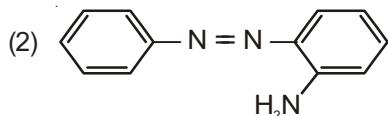
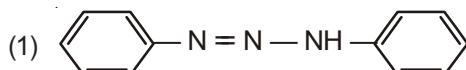
- (1) NH_2NH_2
 (2) $NaBH_4$
 (3) H_2O
 (4) CaH_2

26. Which of the following is NOT a correct method of the preparation of benzylamine from cyanobenzene?

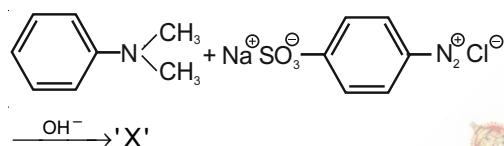
[JEE (Main)-2019]

- (1) (i) $SnCl_2 + HCl(gas)$
 (ii) $NaBH_4$
 (2) H_2/Ni
 (3) (i) $LiAlH_4$
 (ii) H_3O^+
 (4) (i) HCl/H_2O
 (ii) $NaBH_4$

27. Benzene diazonium chloride on reaction with aniline in the presence of dilute hydrochloric acid gives :
[JEE (Main)-2019]

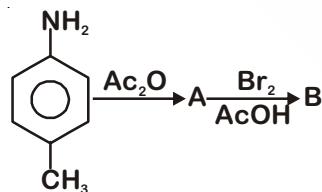


28. Consider the following reaction:



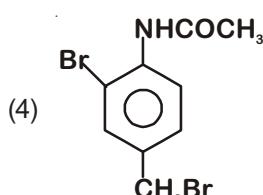
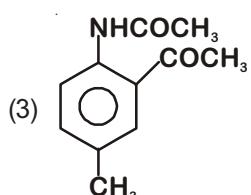
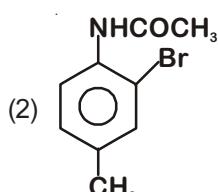
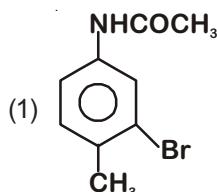
- (1) In acid base titration as an indicator
- (2) In protein estimation as an alternative to ninhydrin
- (3) In laboratory test for phenols
- (4) As food grade colourant

29. In the following reaction sequence:

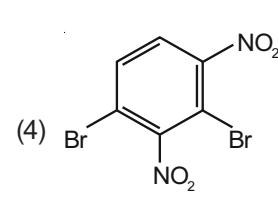
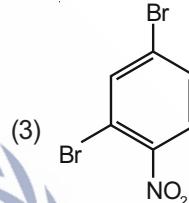
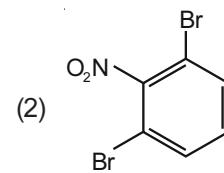
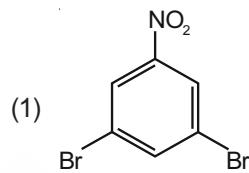
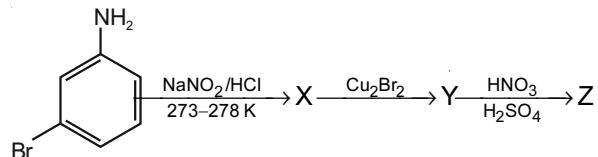


the major product B is:

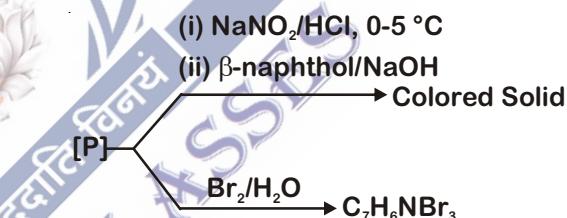
[JEE (Main)-2020]



30. The major product Z obtained in the following reaction scheme is

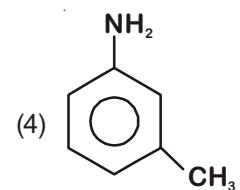
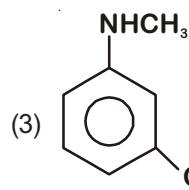
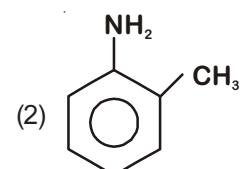
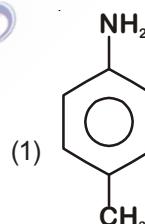


31. Consider the following reactions,



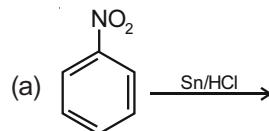
The compound [P] is

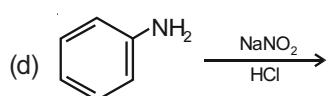
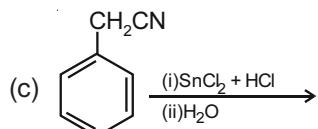
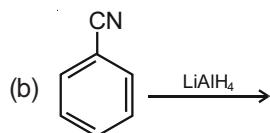
[JEE (Main)-2020]



32. The Kjeldahl method of Nitrogen estimation fails for which of the following reaction products?

[JEE (Main)-2020]

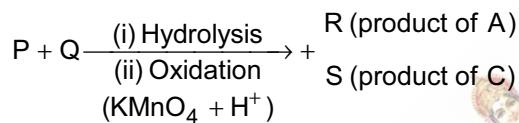
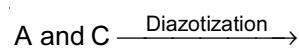




(1) (a), (c) and (d) (2) (a) and (d)

(3) (c) and (d) (4) (b) and (c)

33. Three isomers A, B and C (mol. formula $\text{C}_8\text{H}_{11}\text{N}$) give the following results



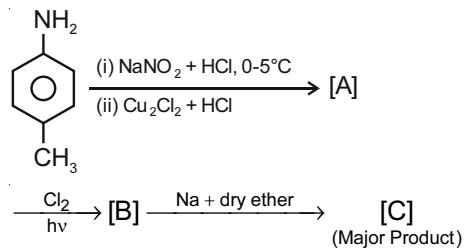
R has lower boiling point than S



A, B and C, respectively are [JEE (Main)-2020]

- (1) , ,
- (2) , ,
- (3) , ,
- (4) , ,

34. In the following reaction sequence, [C] is



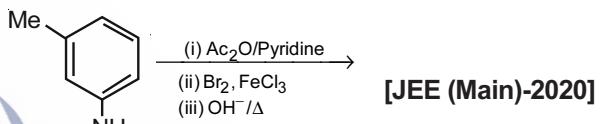
[JEE (Main)-2020]

- (1)
- (2)
- (3)
- (4)

35. The most appropriate reagent for conversion of $\text{C}_2\text{H}_5\text{CN}$ into $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2$ is [JEE (Main)-2020]

- (1) NaBH_4 (2) CaH_2
(3) $\text{Na}(\text{CN})\text{BH}_3$ (4) LiAlH_4

36. The final major product of the following reaction is

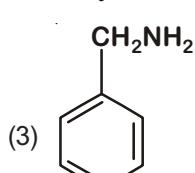
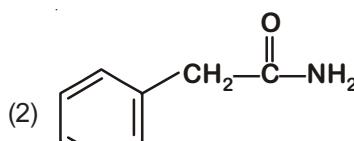
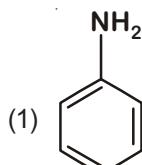


- (1)
(2)

- (3)
(4)

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

[JEE (Main)-2020]



- (4) $\text{CH}_3\text{---CH}_2\text{---NHCH}_3$

38. Match the following :

Test/Method	Reagent	(iv) Hinsberg test	(d) Conc. HCl and $ZnCl_2$
(i) Lucas Test	(a) $C_6H_5SO_2Cl$ / aq. KOH		(e) H_2SO_4
(ii) Dumas method	(b) HNO_3 / $AgNO_3$	(1) (i)-(b), (ii)-(d), (iii)-(e), (iv)-(a) (2) (i)-(d), (ii)-(c), (iii)-(e), (iv)-(a) (3) (i)-(b), (ii)-(a), (iii)-(c), (iv)-(d) (4) (i)-(d), (ii)-(c), (iii)-(b), (iv)-(e)	[JEE (Main)-2020]
(iii) Kjeldahl's method	(c) CuO/ CO_2		

