

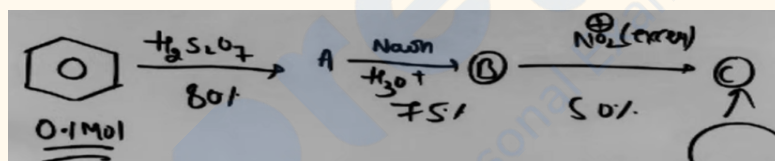
# GATE 2024 Question Paper Feb 3 (Chemistry)

## GATE General Aptitude Questions

### GATE Core Discipline Questions

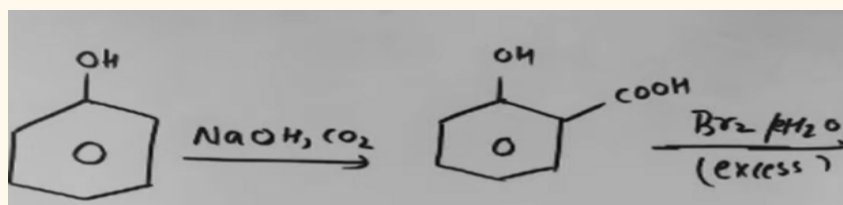
**Ques 1.**  $\Psi(x) = \sqrt{(32/L^3)}[\sin(\pi x/L) \cdot \cos(\pi x/L) \cdot \sin(2\pi y/L) \cdot \sin(\pi z/L)]$  Find the value of  $E_{221} : E_{111}$ .

**Ans.** 3:1



**Ques 2.** what is the final product

**Ans.** Picric acid



**Ques 3.** find the intensity ratio of final product

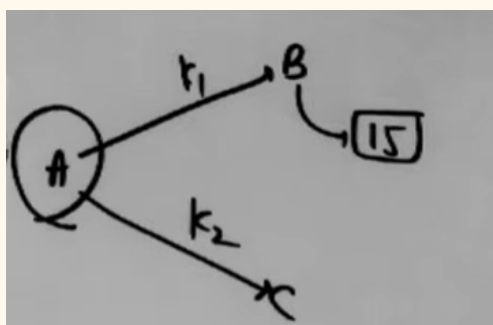
**Ans.** 1:3:3:1

**Ques 4.** which are optically active

A. cis  $\text{Co(en)}_2\text{Cl}_2$

- B.  $\text{trans Co(en)}_2\text{Cl}_2$
- C.  $\text{Co(acac)}_3$
- D.  $\text{Co(en)}_3$

Ans. A,B,D



Ques 5. ,  $k_1=2k_2$ , find the initial concentration of A.

Ans. 22.5

Ques 6. Which among the following is true?

- A.  $2\sigma_d$  and  $\sigma_h$  are present in benzene
- B.  $\sigma_v$  in  $\text{BF}_3$  but not in  $\text{PCl}_5$
- C.  $C_2$  in  $\text{H}_2\text{O}_2$
- D. both  $C_2$  and  $C_3$  are in  $\text{NH}_3$  and  $\text{BF}_3$

Ans. C