

2023
JHARGRAM RAJ COLLEGE
CHEMISTRY

TIME: 2 HOUR M. Sc 3RD SEMESTER INTERNAL EXAMINATION
ORGANIC SPECIAL

F. M: 40

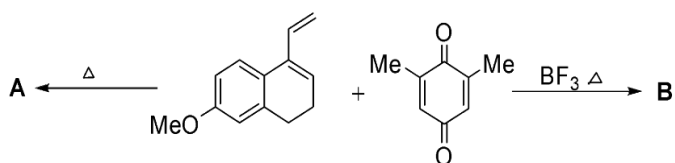
Paper-301

1. (a) What are the conditions to observe NQR signals?
(b) What is the significance of K_{α} in the X-ray light source of MgK_{α} used in XPS?
(c) How many ESR lines will be obtained for 'N' ($I=1$) in **dpph** and why?
(d) How many hyperfine peaks will obtain for anthracene anion and $\cdot CPh_3$?
(e) Why **O-phen** gives turn-on response for Mg^{2+} but turn-off response for Fe^{2+} .

2+2+2+2+2=10

Paper-302

1. (a) Write down the significance of ' δ ' in Taft equation.
(b) Derive Yukawa-Tsuno equation and explain the terms involved.
(c) Explain the reversal regioselectivity of the product A and B in the non-catalysed and BF_3 catalysed reaction.



- (d) What do mean by oxidative addition and reductive elimination? Give examples with explanation? Draw the catalytic cycle of Suzuki reactions.

2+2+3+3 =10

Paper-303

1. (a) What is supramolecular chemistry? Why it is an important discipline in science?
(b) Discuss the catalytic roles of modified CDs in organic synthesis.
(c) What are nematic and discotic phases? Discuss schematically.
(d) Mention the improvements done in different production steps of original route to vitamin C

3+3+2+2 =10