



Ain Shams University  
Faculty of Science  
Chemistry Department

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**NEW ROUTES FOR THE SYNTHESIS  
OF POLYSUBSTITUTED 4H-3,1-  
BENZOXAZINONE AND  
POLYSUBSTITUTED QUINAZOLINONE  
DERIVATIVES AND SOME STUDIES  
WITH THESE DERIVATIVES**

**Thesis**

submitted by

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# **APPROVAL SHEET**

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DERIVATIVES”*

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**Index of abbreviations and symbols :-**

abs.	absolute, dry
Ac	acetyl
anhyd.	Anhydrous
aq.	aqueous
Ar	Aryl
Bn	Benzyl
bp	boiling point
br	broad
Cy	cyclohexyl
CDCl <sub>3</sub>	deuteriochloroform
DCC	dicyclohexylcarbodiimide
DMF	dimethylformamide
DMSO	dimethylsulfoxide
d	doublet (NMR)
EI-MS	Electron Ionization Mass Spectroscopy
ESI-MS	Electron Spray Ionization Mass Spectroscopy
Et	ethyl

FAB-MS	Fast-Atom-Bombardment Mass Spectroscopy
FT	Fourier-Transformation
gl.	Glacial
Hz	Hertz
HR	High Resolution
h	hours
<i>i</i> -	iso
J	Coupling constant in NMR
LR	Low Resolution
MHz	Megahertz
mp	melting point
Me	methyl
min.	minutes
M <sup>+</sup>	molecular peak
Mwt	Molecular weight
m	multiplet (NMR)
<i>n</i> -	normal
Boc	<i>N</i> -tert-butyloxycarbonyl
NMR	nuclear magnetic resonance spectroscopy

ppm	parts per million (NMR)
pet.	Petroleum
Ph	Phenyl
PPE	Polyphosphate ester
Pr	propyl
Pyr.	Pyridine
q	quartet (NMR)
rt	room temperature
s	singlet (NMR)
THF	Tetrahydrofuran
t	time, triplet (NMR)
TEA	triethylamine
$\delta$	delta (NMR)

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