Overall Conclusions

From the results arrived at the investigations on *Momordica dioica* Roxb. and some heterocyclic compounds regarding antifertility and other biological activities, the following conclusions can be drawn:

1. The plant *Momordica dioica* Roxb. has maximum abortifacient activity.
2. It has no toxic and side effects and abortifacient action is reversible.
3. Hence, powdered root of this plant can serve as potential abortifacient agent.
4. This plant is commonly grown in many places throughout Karnataka. The roots are tuberous and voluminous. The root, after drying, can be preserved in the form of powder for several days without any deterioration.
5. This powder can be safely used by pregnant woman even without the consultation of the physician and thus psychological and social inhibition of woman for abortion can be avoided.
6. The active components present in the crude extract, which are responsible for this activity, are found to be flavanone and phenolphthalein.
7. Flavanones are known for their anti-fertility activity. However, phenolphthalein is known for its toxic nature. In the present investigation, it is observed that phenolphthalein is present in this plant in very minute quantity. This dosage is found to be non-toxic when experiments were carried out on rats and mice. Hence, the presence of phenolphthalein in this plant is more beneficial as abortifacient rather than toxic harmful compound.
8. The extracts of this plant are found to be associated with the following pharmacological activities.

- Anthelmintic
- Anti-inflammatory
- Analgesic
- Hepatoprotective
- Antioxidant

Therefore, in addition to potent antifertility agent, the powdered root of this plant can also be used safely for the treatment of helminthiasis, rheumatic arthritis and liver disorders.

9. Among the heterocyclic compounds, synthesized during the present investigation, quinoline derivatives containing both sulphur and selenium as heteroatoms, were found to exhibit considerable antifertility (abortifacient and estrogenic) activity. At the dose tested for this activity, no toxicity and side effects were observed. Hence, after thorough investigation of these compounds, resembling Ellipticine in their structure, could also be used as effective antifertility agents.