CHAPTER 11
CONSTRUCTIONS

NOTES

- **In geometrical construction as far as practicable, only two geometrical instruments, namely a ruler and a compass will be used.**
- **The analysis part which reveals all the necessary clues for the construction problem, is not demanded part to be shown.**

➢ How to deal with a problem of geometrical construction

A problem of geometrical construction requires

(a) skill to use an ungraduated ruler i.e. a straight edge and a compass and

(b) reasoning, base on axioms and propositions related to the figure to be constructed.

For a geometrical construction we usually follow a process consisting of the stages given below:

I. We examine the given data and the required conditions of the problem.

II. We analyse the problem by drawing a rough figure as required by the problem.

From this rough figure we examine various possible ways to construct the required figure using known basic constructions.

III. We then write the steps of actual construction in accordance with the analysis in stage II.

IV. We then prove that the constructed figure satisfies all the required conditions.

➢ Constructions to be studied in this chapter:

- **Construction of a triangle given its base, sum of the other two sides and one base angle.**
- **Construction of a triangle given its base, difference of the other two sides and one base angle.**
- **Construction of triangle given its perimeter and base angles.**
- **Construction of circumcircle of a triangle.**
- **Construction of the incircle of a triangle.**

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