

TECHNICAL DRAWING (67)

(Candidates offering Technical Drawing Applications are not eligible to offer Technical Drawing.)

Aims:

1. To develop competence among the students to pursue technical courses like engineering, architecture, draftsmanship, surveying and other professional courses where mechanical and geometrical drawings are involved.
2. To acquire basic knowledge and understanding of mechanical drawing.
3. To acquire skills of making and understanding technical drawing which enables translation of ideas of a designer on paper into physical product and appliances.

CLASS IX

*There will be one written paper of **three** hours duration carrying 80 marks and Internal Assessment of 20 marks.*

*The paper will be divided into **two** sections, A and B.*

***Section A** will consist of a number of questions covering the entire syllabus. The candidates are to attempt three questions.*

***Section B** will consist of questions which will require detailed answers. There will be a choice and candidates will be required to answer **two** questions from this section.*

1. Lettering and Numbering

- (i) *Freehand of a single stroke, vertical slant.*

2. Orthographic Projection

- (i) *First or third angle drawing.*
- (ii) *Draw the orthographic projection of an object given in 3-dimension form.*
- (iii) *Draw the third orthographic view from the given two views.*

(The exercises should be of objects whose outlines are parallel to the axis and non-isometric.)

3. Sketching

Sketching involving common tools and processes along with common simple mechanical devices met within everyday life. e.g.:

- (a) *Woodwork tools such as wheelbarrow, wheels and axle, turnbuckle, tool rest for wood in the wooden jack plane, two irons of a jack plane, saw, etc.*
- (b) *Metalwork tools such as engineer's bench vice, files of various types and shapes, hammers, chisels, drills, hacksaw, etc.*
- (c) *Items of everyday use such as fountain pen, ball pen, geometrical instruments, pencils, rulers, shoe brush, nut crackers, pincers, pliers, etc.*
- (d) *Common visible items such as cold water tap, bicycle, scooter, street lamp, table and chair, radio, two-in-one tape recorder, sound systems, television, teacher's desk and chair, electric fans of various types, black board, etc.*

INTERNAL ASSESSMENT

A minimum of three assignments are to be done during the year, as assigned by the teacher.

INTERNAL ASSESSMENT IN TECHNICAL DRAWING - GUIDELINES FOR MARKING WITH GRADES

Criteria	Preparation	Analysis	Process	Results	Presentation
Grade I (4 marks)	Follows instructions (written, oral, diagrammatic) with understanding; modifies if needed. Familiarity with and safe use of apparatus, materials, techniques.	Analyses problem systematically. Recognises a number of variables and attempts to control them to build a logical plan of construction.	Comments upon, recognises use of instruments, degree of accuracy. Process is systematic.	Recognises and comments upon sources of error. Can deal with unexpected effects, suggesting modifications.	Presentation is accurate and good. Appropriate techniques are well used.
Grade II (3 marks)	Follows instructions to perform experiment with step-by-step operations. Awareness of safety. Familiarity with apparatus, materials and techniques.	Specifies sequence of operation; gives reasons for any change in procedure.	Makes relevant procedural modification. No assistance is needed for understanding steps of constructions.	Draws qualitative conclusions to proceed with construction.	Presentation is adequate. Appropriate techniques are used.
Grade III (2 marks)	Follows instructions to perform a single operation at a time. Safety awareness. Familiarity with apparatus & materials.	Develops simple development strategy. Trial and error modifications made to proceed with the construction.	Detailed instructions not given.	Draws obvious qualitative conclusions as required in the process.	Presentation is okay, but disorganised in some places. Overwriting; rough work is untidy.
Grade IV (1 mark)	Follows some instructions to perform a single practical operation. Casual about Safety. Manages to use apparatus & materials.	Struggles through the construction. Follows very simple techniques.	Tends to make mistakes in the following procedure.	Even when detailed format is provided, struggles or makes errors while processing the work.	Presentation is poor, disorganised but follows an acceptable sequence. Rough work missing or untidy.
Grade V (0 marks)	Not able to follow instructions or proceed with practical work without full assistance. Unaware of safety.	Cannot proceed with the development without help from time to time.	Even when format is given procedure is not understood.	Cannot process the work even with considerable help.	Presentation unacceptable; disorganised, untidy, poor. Rough work missing.