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FOR MANIPUR CLASS 11 PREPARATION

Manipur Board Class 11 Syllabus 2027 Engineering Drawing

EXAM	YEAR	TYPE	SUBJECT
Manipur Class 11	2027	Syllabus	Engineering Drawing

ENGINEERING DRAWING

CLASS-XI

THEORY

One Paper *3 Hours* *7O Marks*

Unit	Marks
PLANE GEOMETRY	
1. Construction of lines, angles and rectilner figures	4
2. Construction of circles, semi-circles and tangents	6
3. Construction of ellipse, parabola, involute, cycloid, helix and sine-curve	6
SOLID-GEOMETRY	
4. Orthographic-projections of points, lines laminae, (plane) and solids	12
5. Section of solid-figures	15
MACHINE DRAWING	
6. Orthographic projections of simple machine-blocks	12
7. Isometric-projection of laminae (plane) figures	10
8. Development of surfaces	5
Total Marks	**70**

PLANE GEOMETRY

Unit 1 : Construction of lines, angles and their divisions. Simple questions based on triangles, squares, rhombuses, trapeziums, regular polygons-pentagon, hexagon and octagon.

Unit 2 : Construction of circles, external and internal tangents of circles, inscribing of circles in equilaterial traingle, square, rhombus, regular polygons-pentagon, hexagon and octagon.

Unit 3 : (a) Construction of ellipses by the following methods :
- (i) Concentric circles
- (ii) Intersecting arcs
- (iii) Intersecting lines

(b) Construction of Parabola by the following methods :
- (i) Intersecting lines
- (ii) Intersecting arcs

(c) Construction of involute of a circle,

(d) Construction of cycloid, helix and sine curve

SOLID GEOMETRY

Unit 4 : Methods of orthographic projections and dimensioning strictly as per SP: 46-1988 revised conventions. Projection of points, lines, regular plane figure and right regular solids such as cubes, prisms and pyramids (square, traingular, pentagonal and hexagonal), tetrahedrons, cones, cylinders, spheres, hemi-spheres and frustum of solids when they are kept with their axis perpendicular, to HP/VP or parallel to one plane and inclined to the other or parallel to HP and VP both.

Unit 5 : Section of solids under the same conditions mentioned above made by the horizontal, vertical and inclined planes, also showing true-shape of section

MACHINE DRAWING

Unit 6 : Orthographic projections of machine blocks.

Unit 7 : Construction of Isometric scale showing main devisions of 10 mm and smaller divisions of 1 mm each. Isometric projection (drawn to isometric scale) of figures such as traingles, squares, pentagons, hexagons, circles and semi-circles with their surface parallel to HP or VP and its one side or diagonal or diameter should be either parallel or perpendicular to HP/VP.

Unit 8 : Development of the surfaces of following solids :

1. Cube, cuboid, prisms-triangular, square, pentagonal and hexagonal.
2. Pyramids (triangular, square, pentagonal and hexagonal).
3. Right-circular-cylinder and cone

ENGINEERING DRAWING

CLASS-XI

PRACTICAL

One Paper (Practical) ***3 Hours*** ***3O Marks***

1. Developing “Prisms” & “Pyramids” with the help of card baord (thick paper).
2. Developing different types of packing boxes (cartons).
3. Making different types of graphics designs/murals for interior/exterior decorations using coloured laminae using the knowledge of circumscribing, inscribing and describing of plane geometrical figures.
4. Drawing ellipse by
   (a) Trammel method
   (b) Thread method
   On ground or drawing-sheets/ply-wood.

5. Preparing top-view (plan) of a
   (a) Class-room
   (b) Drawing-room
   (c) Home
   Showing different objects in it.

6. Drawing through activities :
   (a) Involutes
   (b) Cycloid
   (c) Helix
   (d) Sine-curves and listing their uses in daily life.

7. Preparing the following sections of solids (prisms, pyramids, sphere etc.) with clay, soap, thermocol, plasticine, wax or any other material easily and economically available. When the cutting plane is :
   (i) Parallel to the base
   (ii) perpendicular to the base
   (iii) inclined to the base
   (iv) cutting at a given height at a given angle above the base.
   Also making different objects with combination of above solids and their section models.

Note :

I. In all the practicals drawing/sketching of the views should be incorporated and evaluated accordingly

II. The scheme of evaluation is as follows :

(a)	Practicals (2)	15 Marks
(b)	Drawing/Sketch	05 Marks
(c)	Viva-voce	05 Marks
(d)	Sessional Work	05 Marks
	Total	**30 Marks**

PRESCRIBED TEXTBOOK :

1. Basic Engineering Drawing Part I
   By : V.P. Kumar
   Published by : Kumarson Publishers, New Delhi.

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DESIGN OF QUESTION PAPER

Subject : ENGINEERING DRAWING
Paper : Theory
Class : XI
Full Mark : 70
Time : 3 Hours

I — WEIGHTAGE TO OBJECTIVES:

Objectives	Marks	Percentage
Knowledge (K)	11	15
Understanding (U)	38	55
Application (A)	21	30
Skill (S)	-	-
Total:	**70**	**100**

II — WEIGHTAGE TO FORM OF QUESTIONS:

Form of Questions	No. of Question	Time (in minutes)	Marks	Percentage
Essay/Long Answer (E/LA)	1	50	15	21
Short Answer (SA-I)	2	50	20	28
Short Answer (SA-II)	4	60	25	36
MCQ	10	20	10	15
Total:	**17**	**180**	**70**	**100**

III — WEIGHTAGE TO CONTENT:

UNIT		CONTENTS	Marks	Percentage
PLANE GEOMETRY				
1	i)	Construction of lines, angle, rectilinear figures	4	6
	ii)	Construction of Circles, Semi-circle and Tangents	6	9
	iii)	Construction of ellipse, Parabola, involute, cycloid, helix and sine curve	6	9
SOLID GEOMETRY				
2	i)	Orthographic-Projection of points, lines Laminae (Plane) figures	12	17
	ii)	Section of Solid figures	15	21
MACHINE DRAWING				
3	i)	Orthographic-Projection of simple machine blocks	12	17
	ii)	Isometric- Projection of laminate (plane) figures	10	14
	iii)	Development of surfaces	5	7
		TOTAL	70	100

IV — SCHEME OF SECTIONS: Nil

V — SCHEME OF OPTIONS: Internal option will be given in Essay Type Question only

VI — DIFFICULTY LEVEL:
Difficult : 40% of the total marks
Average : 45% of the total marks
Easy : 15% of the total marks

Abbreviation: K(Knowledge), U(Understanding), A(Application), Skill(S), E/LA(Essay /Long Answer Type), SA(Short Answer Type), VSA(Very Short Answer Type), MCQ(Multiple Choice Question)

NOTE- (i) Two questions out of 10 (ten) questions of MCQ will be assertion & reason type question.
(ii) Only one question of SA-I will be Case Study Based question.

ENGINEERING DRAWING

(THEORY)

CLASS - XI

BLUE PRINT

Time : 3 Hours **Full Marks : 7O**

UNIT-I PLANE GEOMETRY **16**

Sl. No.	Contents	Weightage/Marks
i.	Construction of lines, angles, rectilinear figures.	4
ii.	Construction of circles, semi circles and tangents.	6
iii.	Construction of ellipse, parabola, involute, cyeloid, helix and sine curve.	6

UNIT-II SOLID-GEOMETRY **27**

Sl. No.	Contents	Weightage/Marks
i.	Orthographic - projections of points, lines laminae (plane) and solids.	12
ii.	Section of solid figures.	15

UNIT-III MACHINE DRAWING **27**

Sl. No.	Contents	Weightage/Marks
i.	Orthographic projections of simple machine blocks.	12
ii.	Isometric - projection of laminae (plane) figures.	10
iii.	Development of surfaces.	5

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ENGINEERING DRAWING

(PRACTICAL INSTRUCTION)

CLASS - XI

One Paper **3 Hours** **Full Marks : 3O**
Pass Marks : 12

INSTRUCTION TO EXAMINERS

Collect Record book/Drawing sheets from the students before they start practical work.
Only Drawing Instruments are allowed in the practical hall :

DISTRIBUTION OF MARKS/VALUE POINTS MAY BE AS FOLLOWS :

1.	(i)	Drawing		4
	(ii)	Folding of edges		2
	(iii)	Finishing of objects		1
2.	(i)	Preparing to the scale		5
	(ii)	Cutting accurately to the given measurement		5
		OR		
	(i)	Number of geometrical shape used		2
	(ii)	Correct used of shape		3
	(iii)	Proper Assembling to get desired design		3
3.	A.	(i)	Proper labeling	1
		(ii)	Drawing	4
			Or	
	B.	(i)	Accurate Measurement	1
		(ii)	Correct procedure	2
		(iii)	Proper shape	2
4.	* Viva Voce – (at least 5 questions relating to the practical activities mentioned above are to be asked.)			5
5.	* Sessional work [Regularity, neatness and no. of records/sessional work are to be observed]			5

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