**INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD**

**DEPARTMENT OF CIVIL ENGINEERING**

**Mid Semester Examination (Monsson Semester) (2025-26)**

**NCES101- Engineering Graphics**

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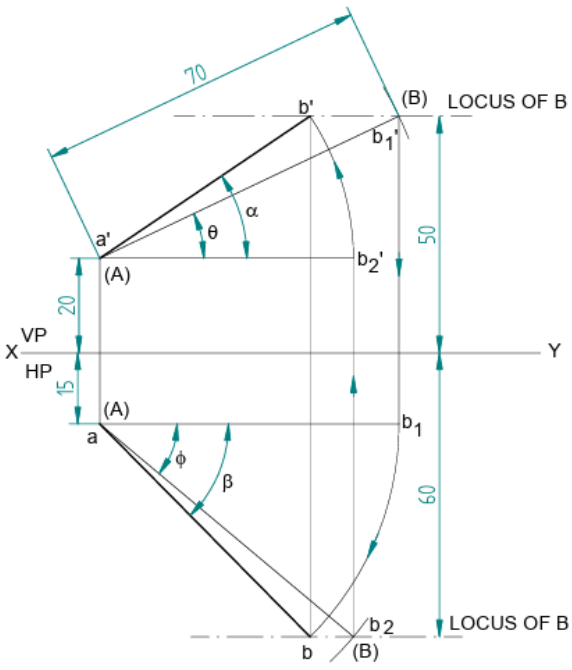
**SET 3**

| | | | | | |
|---|---|---|---|---|---|
| **Date** | : | 21-09-2025 | **Duration** | : | 1 hour |
| **Time** | : | 3 PM to 4 PM | **Total Marks** | : | 20 |

**Notes:** Answer all the questions in the drawing sheet only.
This question paper has a total of 2 questions printed on 1 page.
Any data found missing can be assumed suitably.

| | |
|---|---|
| **1)** | A line AB measuring 70 mm has its end A 15 mm infront of VP and 20 mm above HP and the other end B 60 mm infront of VP and 50 mm above HP. Draw the projections of the line and find the apparent inclinations of the line. |
| | [10 marks] |




SWERS
α = 34.02°
θ = 25.38°

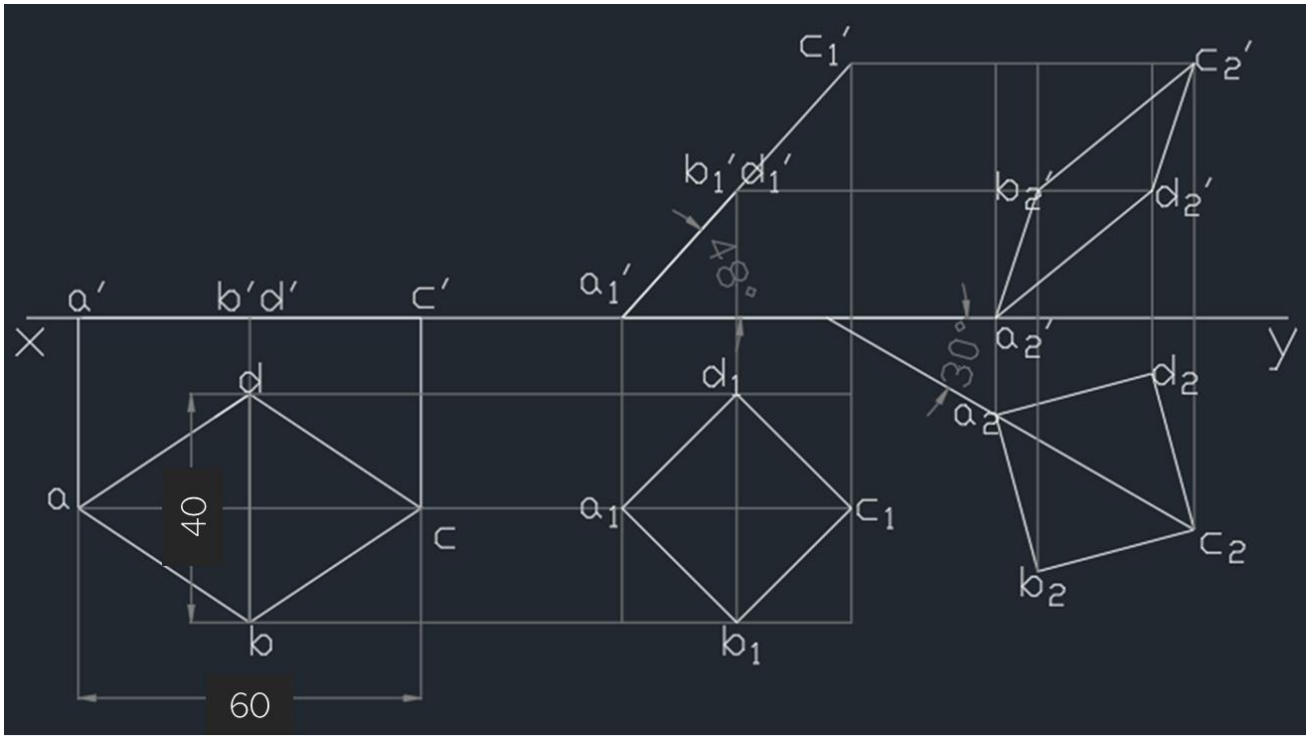
| Steps | Marks |
|---|---|
| Correct marking of a and a’ | 1 (0.5+0.5) |
| Drawing of line a’$b_1$’ | 1.5 |

| | |
|---|---|
| Drawing the line $ab_2$ | 1.5 |
| Drawing of Top view of line (ab) | 1.5 |
| Front view of line a'b' | 1.5 |
| Apparent inclination with HP (= 34±2 degree) and VP (=25±2 degree). | 1+1 |
| Dimensioning and Labelling | 1 |
| **Total** | **10** |

| | |
|---|---|
| **2)** | *ABCD* is a rhombus plate having horizontal diagonal *AC* = 60 mm and vertical diagonal *BD* = 40 mm. *AC* and *BD* are perpendicular to each other. Draw the projections of the plate in both the planes, when it is rotated in such a way that it is $48^0$ inclined to the HP and $30^0$ inclined to the VP. |
| | [10 marks] |

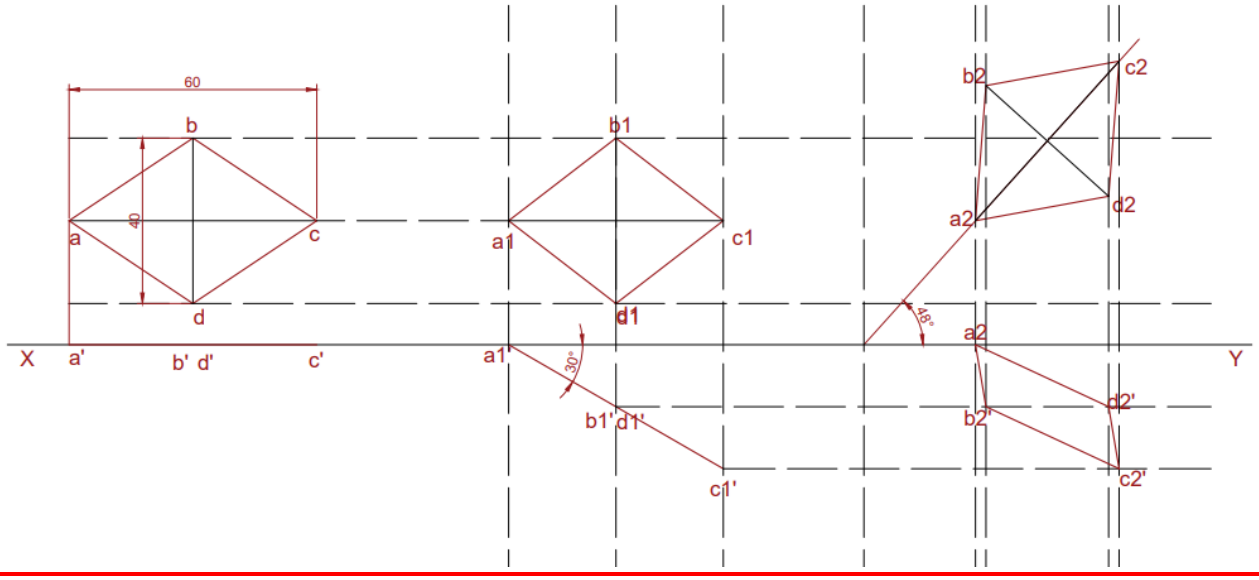
**Note: No marks will be deducted if you keep the plane in HP or VP (As question does not require this to get it solved)**

**Case 1: When it is assumed in HP**



| Steps | Marks |
|---|---|
| Draw First Front View and Top View | 2 (1+1) |
| Draw Second Front View | 1 |
| Draw Second Top View | 2 |
| Draw Third Top View | 2 |
| Draw Third Front View | 2 |
| Labelling and dimensioning | 1 |
| **Total** | **10 Marks** |

## Case 2: When it is assumed in VP




| Steps | Marks |
|---|---|
| Draw First Front View and Top View | 2 (1+1) |
| Draw Second Top View | 1 |
| Draw Second Front View | 2 |
| Draw Third Top View | 2 |
| Draw Third Front View | 2 |
| Labelling and dimensioning | 1 |
| **Total** | **10 Marks** |