

# Faculty of Engineering / Science

## End Semester Examination May 2025

### EN3ES26 / BC3ES11 Engineering Graphics

<b>Programme</b>	:	B.Tech. / B.Sc.	<b>Branch/Specialisation</b>	:	All
<b>Duration</b>	:	3 hours	<b>Maximum Marks</b>	:	60

**Note:** All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.

#### Section 1 (Answer all question(s))

Marks CO BL

**Q1.** What happens if an object is placed in the third quadrant in an orthographic projection?

1 1 1

<b>Rubric</b>	<b>Marks</b>
The top view is above the front view	1

- The views overlap
- The front view is above the top view
- The projections remain unchanged
- The top view is above the front view

**Q2.** A line inclined to both HP and VP will appear in the front and top views as-

1 1 1

<b>Rubric</b>	<b>Marks</b>
Shorter length in both views	1

- True length in both views
- True length in one and shorter in another
- Shorter length in both views
- Point in both views

**Q3.** When a circular plane is perpendicular to the HP and inclined to the VP, its front view will appear as-

1 2 2

<b>Rubric</b>	<b>Marks</b>
An ellipse	1

- A circle
- An ellipse
- A line
- A parabola

**Q4.** Number of faces in a dodecahedron are-

1 2 1

<b>Rubric</b>	<b>Marks</b>
12	1

- 4
- 12
- 8
- 20

**Q5.** A cone is cut by a section plane parallel to the profile plane. Its true shape of section is seen in-

1 3 2

<b>Rubric</b>	<b>Marks</b>
side view	1

- Front view
- Side view
- Top view
- Auxiliary view

**Q6.** Sector of a circle of radius 60 mm and angle  $120^\circ$  represents development of the lateral surface of a cone. The top view of the cone is a circle of diameter- 1 3 2

Rubric	Marks
40 mm	1

- 20 mm
- 40 mm
- 60 mm
- 80 mm

**Q7.** Status bar do not contain- 1 4 1

Rubric	Marks
erase	1

- Snap
- Grid
- Erase
- Polar

**Q8.** Offset command can be used for drawing- 1 4 1

Rubric	Marks
parallel lines	1

- Infinite long lines
- Parallel lines
- Intersecting lines
- Perpendicular bisectors

**Q9.** In CAD software, layers can be controlled by- 1 4 1

Rubric	Marks
Colour, line type, and line weight	1

- Colour, line type, and line weight
- Font size only
- Print settings only
- File name

**Q10.** Which of the following is not a standard type of dimensioning? 1 4 1

Rubric	Marks
Spherical	1

- Linear
- Angular
- Spherical
- Radial

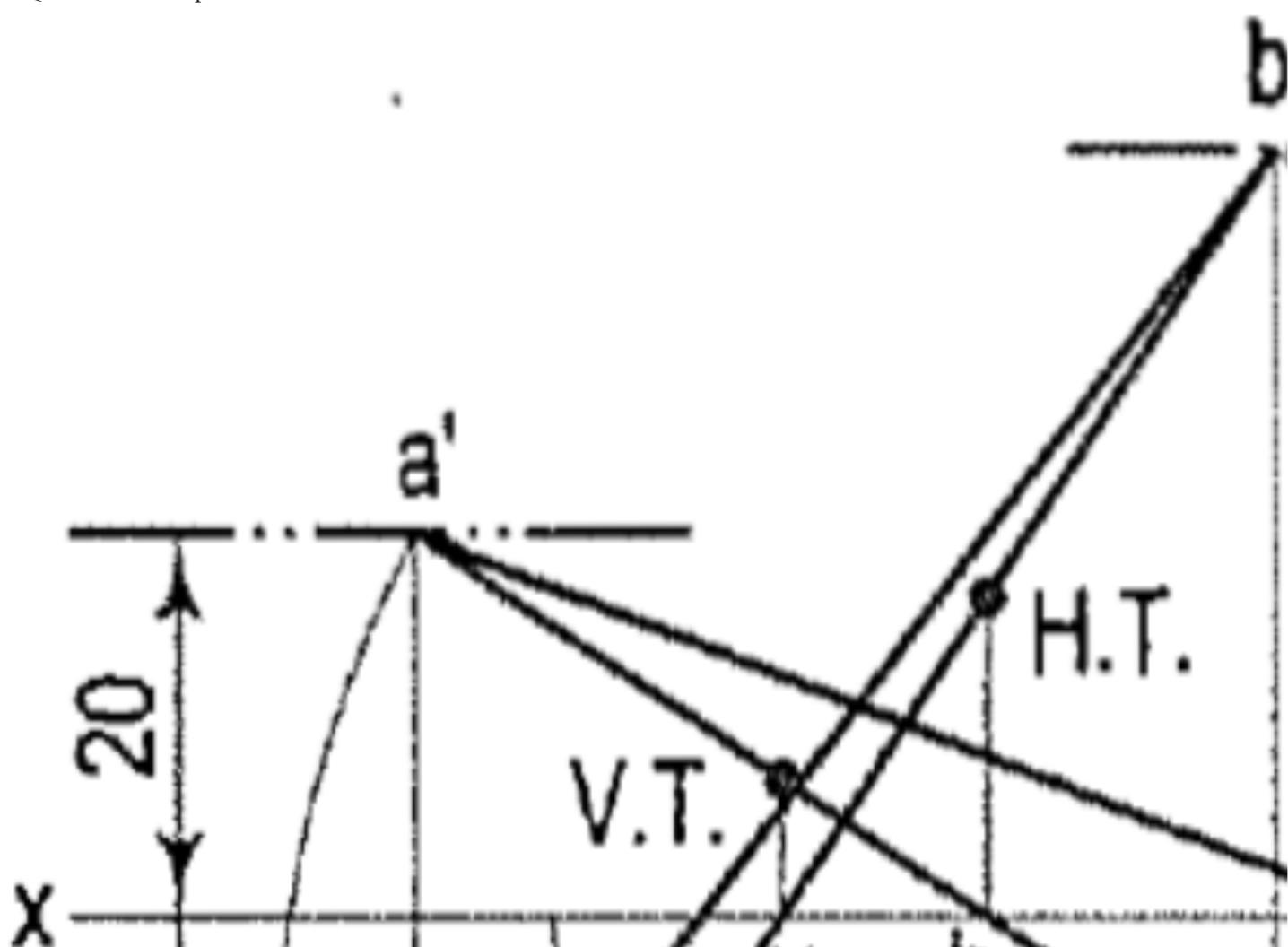
### Section 2 (Answer all question(s))

**Marks CO BL**

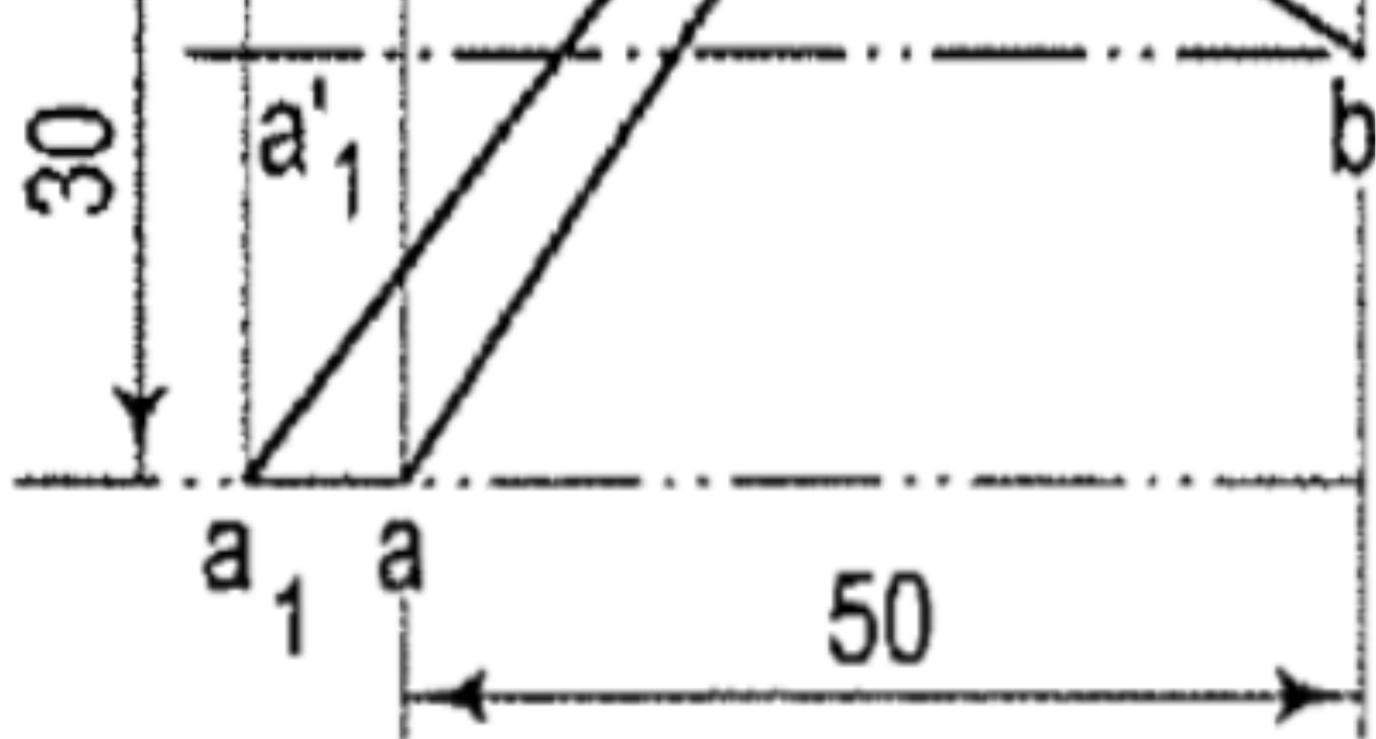
**Q11.** Differentiate between the first angle projection and the third angle projection. 4 1 1

Rubric	Marks
Four Differences	4

- Q12. (a)** A line PQ 100 mm long is inclined at  $30^\circ$  to the H.P. and at  $45^\circ$  to the V.P. Its mid-point is in the V.P. and 20 mm above the H.P. Draw its projections, if its end P is in the third quadrant and end Q is in the first quadrant.



- (b)** The projectors of the ends of a line AB are 50 mm apart. The end A is 20 mm above the H.P. and 30 mm in front of the V.P. The end B is 70 mm below the H.P. and 40 mm behind the V.P. Determine the true length and traces of AB, and its inclinations with the two planes.



**Section 3 (Answer all question(s))****Marks CO BL**

- Q13.** A rectangular plane of sides 40 mm and 60 mm has a corner on the H.P. and 20 mm in front of the V.P. The surface of the plane is parallel to the V.P. and all the sides are equally inclined to the H.P. Draw its projections and locate the traces.

Rubric	Marks
Front & Top view	2
Dimensions & Trace	1

- Q14. (a)** A thin circular plate of diameter 60 mm appears in the front view as an ellipse of major and minor axes 60 mm and 40 mm respectively. Draw its projections when one of the diameters is parallel to both the reference planes.

Rubric	Marks
First Stage Front and Top View & Dimension	3
Second stage Front view and Top View & Dimension	3
Third stage Front view and Top View	1

(OR)

- (b)** A square pyramid of base side 40 mm and axis 55 mm is resting on one of its triangular faces on the H.P. such that its axis is parallel to VP to the V.P. Draw its projections.

Rubric	Marks
First Stage Front and Top View & Dimension	3
Second stage Front view and Top View	4

#### Section 4 (Answer all question(s))

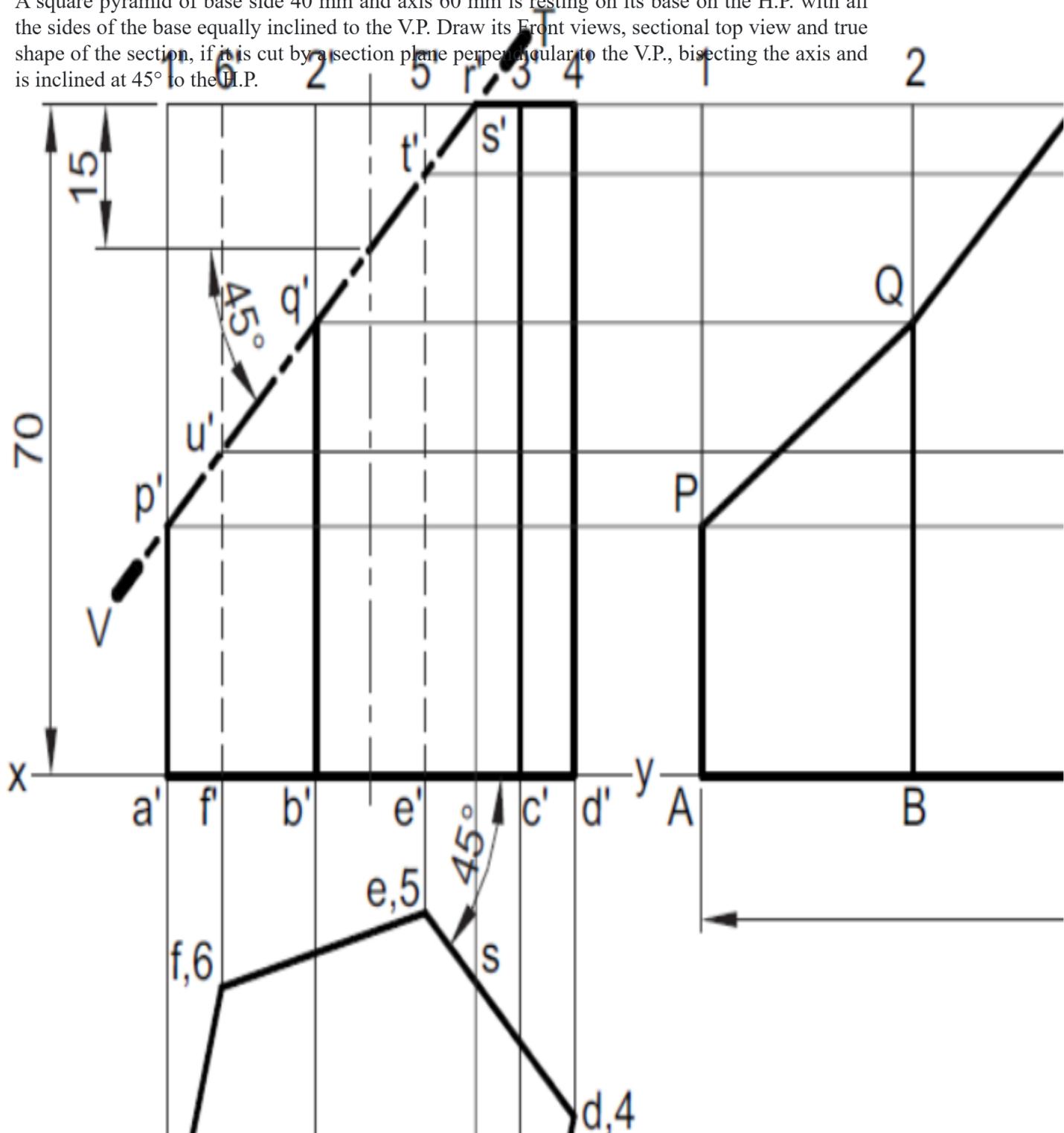
Marks CO BL

- Q15.** Explain in brief the methods of development of surfaces.

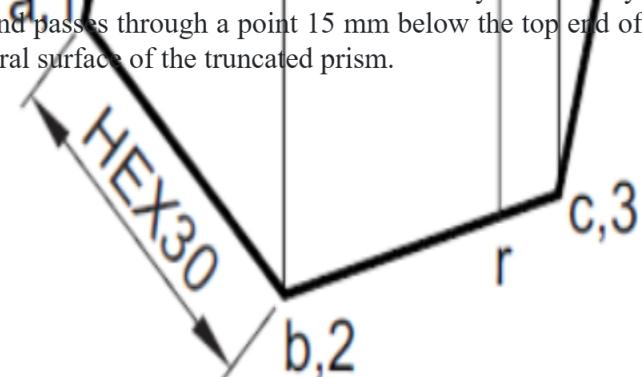
4 3 2

Rubric	Marks
Four Methods of Developments	4

- Q16. (a)** A square pyramid of base side 40 mm and axis 60 mm is resting on its base on the H.P. with all the sides of the base equally inclined to the V.P. Draw its Front views, sectional top view and true shape of the section, if it is cut by a section plane perpendicular to the V.P., bisecting the axis and is inclined at  $45^\circ$  to the H.P.



- (b)** A hexagonal prism of base side 30 mm and axis 70 mm is resting on its base on the ground with a side of base inclined at  $45^\circ$  to the V.P. It is cut by an auxiliary inclined plane inclined at  $45^\circ$  to the H.P. and passes through a point 15 mm below the top end of the axis. Draw the development of the lateral surface of the truncated prism.



**Section 5 (Answer all question(s))****Marks CO BL****Q17.** Explain the different settings available in the units dialog box of AutoCAD.

4 4 1

<b>Rubric</b>	<b>Marks</b>
dialog box with settings	2
Explanations	2

**Q18. (a)** Explain any six tools with their corresponding icons available with Draw panel.

6 4 2

<b>Rubric</b>	<b>Marks</b>
Name of the tools with their corresponding icons.	3
Explanations	3

**(OR)****(b)** Explain briefly the series of AutoCAD steps needed to draw a square of 50 cm sides using the line tool, rectangle tool and polygon tool.

<b>Rubric</b>	<b>Marks</b>
steps of line tools to draw a square of 50 cm side	2
steps of Rectangle tools to draw a square of 50 cm side	2
steps of Polygon tools to draw a square of 50 cm side	2

**Section 6 (Answer any 2 question(s))****Marks CO BL****Q19.** Explain the purpose of layers in AutoCAD.

5 4 2

<b>Rubric</b>	<b>Marks</b>
Five Points of Explanations about the purpose of layers.	5

**Q20.** Explain briefly single line text and multiline text.

5 4 1

<b>Rubric</b>	<b>Marks</b>
Five points about the Single Line Text & Multiline Text	5

**Q21.** Explain the different types of dimensioning which are used in CAD.

5 4 2

<b>Rubric</b>	<b>Marks</b>
Five types & their Explanations	5

\*\*\*\*\*

1135

# Faculty of Engineering / Science

## End Semester Examination May 2025

### EN3ES26 / BC3ES11 Engineering Graphics

<b>Programme</b>	:	B.Tech. / B.Sc.	<b>Branch/Specialisation</b>	:	All
<b>Duration</b>	:	3 hours	<b>Maximum Marks</b>	:	60

**Note:** All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary.

Notations and symbols have their usual meaning.

#### Section 1 (Answer all question(s))

**Q1.** What happens if an object is placed in the third quadrant in an orthographic projection? Marks CO BL  
1 1 1

Rubric	Marks
The top view is above the front view	1
<input checked="" type="radio"/> The views overlap	<input type="radio"/> The projections remain unchanged
<input checked="" type="radio"/> The front view is above the top view	<input checked="" type="radio"/> The top view is above the front view

**Q2.** A line inclined to both HP and VP will appear in the front and top views as- 1 1 1

Rubric	Marks
Shorter length in both views	1
<input checked="" type="radio"/> True length in both views	<input type="radio"/> Shorter length in both views
<input checked="" type="radio"/> True length in one and shorter in another	<input type="radio"/> Point in both views

**Q3.** When a circular plane is perpendicular to the HP and inclined to the VP, its front view will appear as- 1 2 2

Rubric	Marks
An ellipse	1
<input checked="" type="radio"/> A circle	<input type="radio"/> A line
<input checked="" type="radio"/> An ellipse	<input type="radio"/> A parabola

**Q4.** Number of faces in a dodecahedron are- 1 2 1

Rubric	Marks
12	1
<input checked="" type="radio"/> 4	<input type="radio"/> 8
<input checked="" type="radio"/> 12	<input type="radio"/> 20

**Q5.** A cone is cut by a section plane parallel to the profile plane. Its true shape of section is seen in- 1 3 2

Rubric	Marks
side view	1
<input checked="" type="radio"/> Front view	<input type="radio"/> Top view
<input checked="" type="radio"/> Side view	<input type="radio"/> Auxiliary view

**Q6.** Sector of a circle of radius 60 mm and angle  $120^\circ$  represents development of the lateral surface of a cone. The top view of the cone is a circle of diameter- 1 3 2

Rubric	Marks
40 mm	1
<input checked="" type="radio"/> 20 mm	<input type="radio"/> 40 mm
<input checked="" type="radio"/> 60 mm	<input type="radio"/> 80 mm

**Q7.** Status bar do not contain- 1 4 1

Rubric	Marks
erase	1
<input checked="" type="radio"/> Snap	<input type="radio"/> Grid
<input checked="" type="radio"/> Erase	<input type="radio"/> Polar

**Q8.** Offset command can be used for drawing- 1 4 1

Rubric	Marks
parallel lines	1
<input checked="" type="radio"/> Infinite long lines	<input type="radio"/> Parallel lines
<input checked="" type="radio"/> Intersecting lines	<input type="radio"/> Perpendicular bisectors

**Q9.** In CAD software, layers can be controlled by- 1 4 1

Rubric	Marks
Colour, line type, and line weight	1
<input checked="" type="radio"/> Colour, line type, and line weight	<input type="radio"/> Font size only
<input checked="" type="radio"/> Print settings only	<input type="radio"/> File name

**Q10.** Which of the following is not a standard type of dimensioning? 1 4 1

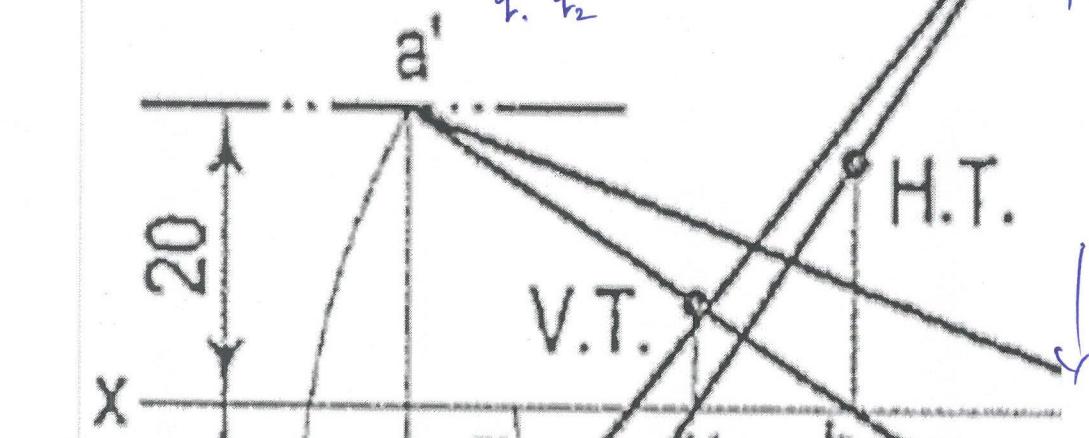
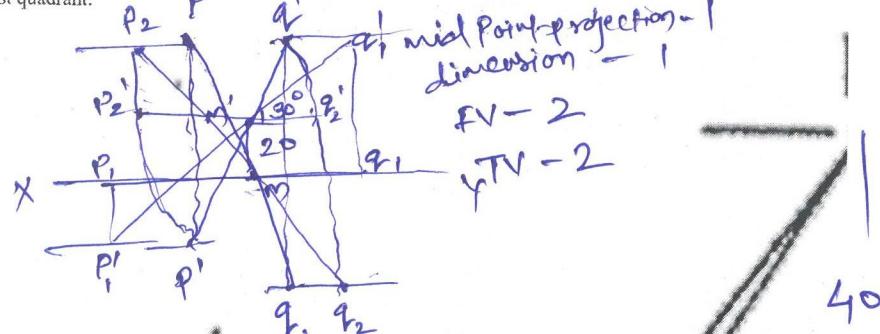
Rubric	Marks
Spherical	1
<input checked="" type="radio"/> Linear	<input type="radio"/> Angular
<input checked="" type="radio"/> Spherical	<input type="radio"/> Radial

#### Section 2 (Answer all question(s))

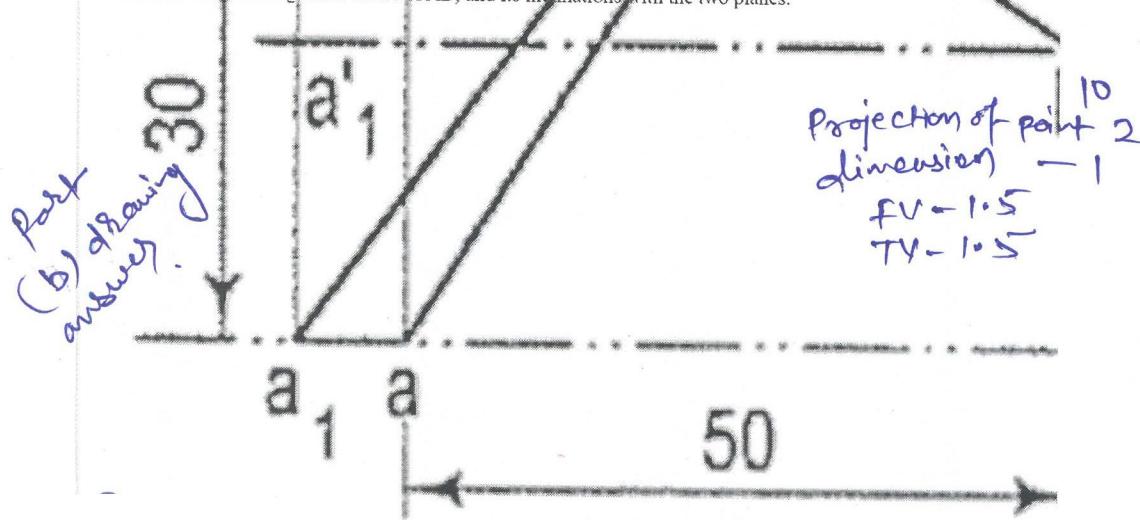
**Q11.** Differentiate between the first angle projection and the third angle projection. Marks CO BL  
4 1 1

Rubric	Marks
Four Differences	4

- Q12. (a)** A line PQ 100 mm long is inclined at  $30^\circ$  to the H.P. and at  $45^\circ$  to the V.P. Its mid-point is in the V.P. and 20 mm above the H.P. Draw its projections, if its end P is in the third quadrant and end Q is in the first quadrant.



- (b)** The projectors of the ends of a line AB are 70 mm apart. The end A is 20 mm above the H.P. and 30 mm in front of the V.P. The end B is 70 mm below the H.P. and 40 mm behind the V.P. Determine the true length and traces of AB, and its inclinations with the two planes.



6 2 3

3

### Section 3 (Answer all question(s))

Marks CO BL  
3 2 3

- Q13.** A rectangular plane of sides 40 mm and 60 mm has a corner on the H.P. and 20 mm in front of the V.P. The surface of the plane is parallel to the V.P. and all the sides are equally inclined to the H.P. Draw its projections and locate the traces.

Rubric	Marks
Front & Top view	2
Dimensions & Trace	1

- Q14.(a)** A thin circular plate of diameter 60 mm appears in the front view as an ellipse of major axis 60 mm and minor axis 40 mm respectively. Draw its projections when one of the diameters is parallel to both the reference planes.

Rubric	Marks
First Stage Front and Top View & Dimension	3
Second stage Front view and Top View & Dimension	3
Third stage Front view and Top View	1

(OR)

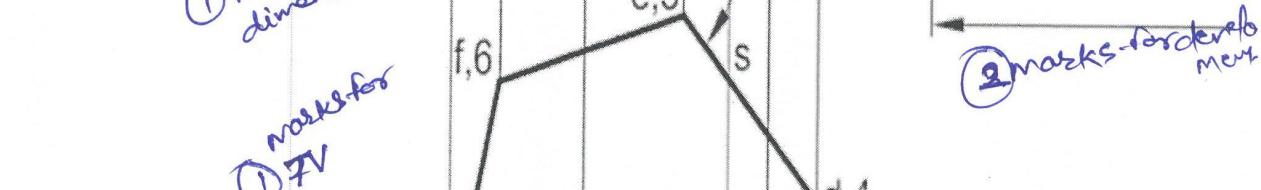
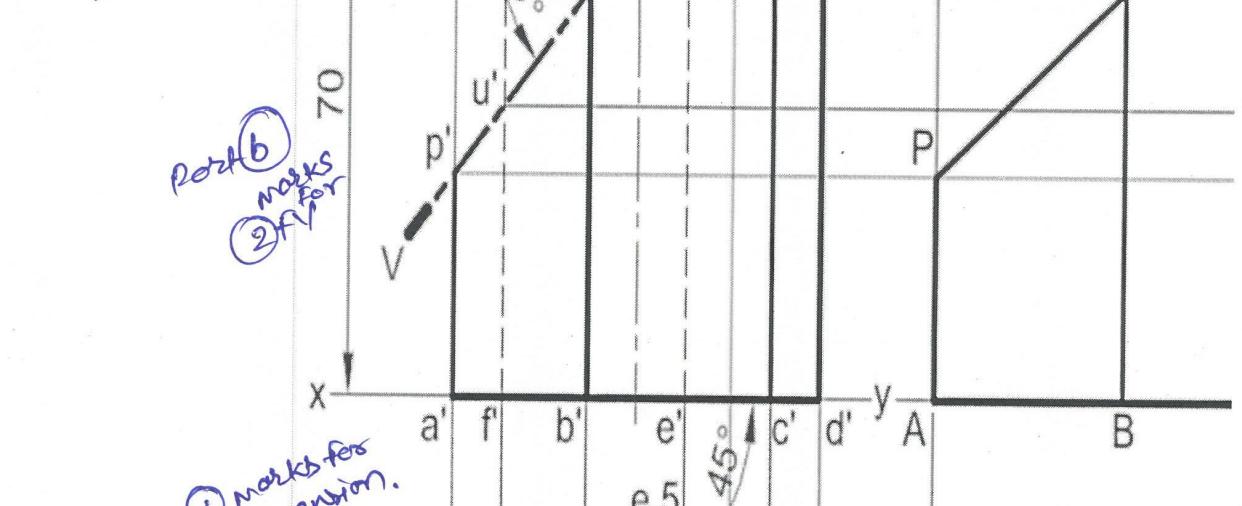
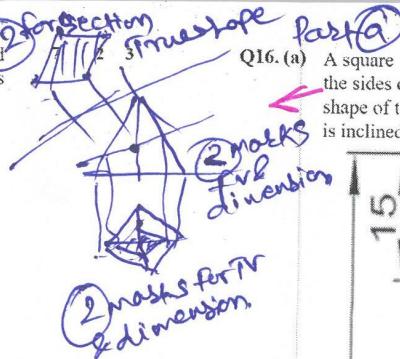
- (b)** A square pyramid of base side 40 mm and axis 55 mm is resting on one of its triangular faces on the H.P. such that its axis is parallel to V.P. to the V.P. Draw its projections.

Rubric	Marks
First Stage Front and Top View & Dimension	3
Second stage Front view and Top View	4

#### Section 4 (Answer all question(s))

- Q15.** Explain in brief the methods of development of surfaces.

Rubric	Marks
Four Methods of Developments	4



Marks CO BL  
4 3 2

**Section 5 (Answer all question(s))**

**Q17.** Explain the different settings available in the units dialog box of AutoCAD.

Marks CO BL  
4 4 1

Rubric	Marks
dialog box with settings	2
Explanations	2

**Q18. (a)** Explain any six tools with their corresponding icons available with Draw panel.

6 4 2

Rubric	Marks
Name of the tools with their corresponding icons.	3
Explanations	3

(OR)

**(b)** Explain briefly the series of AutoCAD steps needed to draw a square of 50 cm sides using the line tool, rectangle tool and polygon tool.

Rubric	Marks
steps of line tools to draw a square of 50 cm side	2
steps of Rectangle tools to draw a square of 50 cm side	2
steps of Polygon tools to draw a square of 50 cm side	2

**Section 6 (Answer any 2 question(s))**

**Q19.** Explain the purpose of layers in AutoCAD.

Marks CO BL  
5 4 2

Rubric	Marks
Five Points of Explanations about the purpose of layers.	5

**Q20.** Explain briefly single line text and multiline text.

5 4 1

Rubric	Marks
Five points about the Single Line Text & Multiline Text	5

**Q21.** Explain the different types of dimensioning which are used in CAD.

5 4 2

Rubric	Marks
Five types & their Explanations	5

\*\*\*\*\*